

Regina Revitalization Initiative Stadium Project **Concept Summary Report**

Contents

Page	Section
4	1.0 Executive Summary
5	2.0 General
8	3.0 Brief
11	4.0 Design Criteria
21	5.0 Site Planning
37	6.0 Bowl
49	7.0 Hospitality
59	8.0 General Arrangement
65	9.0 Envelope
75	10.0 Sustainability & Culture
79	11.0 Artist Impressions

1.0 Executive Summary

The purpose of this report is to provide information about the current status of the project and allow informed decision-making with regard to the procurement process. Several studies have been commissioned that have informed this report and others are being finalized. In particular, a Food and Beverage Study and a Hospitality Market Study (i.e. general fan amenities with particular focus on premium seating options) have recently concluded that will inform the work in the final procurement documentation.

The design team has established the project's program through a consultative process of stakeholder engagement, supplemented by knowledge of relevant practice globally and in North America. The local characteristics of expansive Skies (Infinite Horizons), mineral resources and the prairie landscape are the intellectual basis of the concept design.

Several Canadian, American and global precedents have been studied to benchmark the program and learn from the experience of other cities. Improving utilization, maximizing the multi-use opportunities and optimizing the financial viability have been central to the concept design. Hospitality content is fundamental to these issues. In the current concept design, the hospitality content has been developed with the stakeholders and informed through the Hospitality Market Study and is approximately 6% of the total capacity of 33,000 seats, rising to 9% including the party decks.

As a Regina Revitalization Initiative (RRI) project, urban context and the relationship to Evraz Place has informed the location of the stadium. It is a balance of regeneration, community benefit and the operational requirements of Evraz Place. The stadium is located to allow separate and integrated use with the existing

Evraz assets. As such, it is a stand alone facility that could be connected to the existing complex of buildings in the future. The frontage on Elphinstone presents a high quality public realm in the form of a new plaza, enhancing the local streetscape and creating the forecourt for fans and tourists visiting the new stadium.

A city-wide benefit that was created by this project is the idea of a linear park along the railway track to downtown. It is now a distinct RRI project. This simple and relatively low cost intervention will dramatically improve the setting of the stadium and all the properties adjoining the tracks. It will provide a direct and pleasant pedestrian route which could also include a cycle and bus lane. This direct connection of downtown and Evraz place will create economic benefit in both locations improving the quality of events.

Various seating layouts (bowl) were considered. An evolution of the traditional side stand arrangement that creates more good seats, called the "infinity bowl", has been adopted. This bowl configuration is also good for adding temporary seats to increase the capacity (42,000) for very high profile events like the Grey Cup.

The stadium envelope, which includes the roof, is inspired by the vast Skies of the province. Considered in respect of the local climate and expected usage, it is visually striking and practical. A 'smart' envelope that removes the wind in the fall and winter and adds the radiant benefits of the sun creates more comfortable conditions. In summer, the wind is allowed to blow through to cool spectators. Analysis has shown that the roof geometry has a material impact on spectator comfort; it has therefore been designed to achieve material benefit and create a new landmark for Regina.

In conclusion, the stadium concept design achieves the following:

- Neighbourhood regeneration and community benefit
- Enhancement of the local urban environment
- Spectator Roof - an economic solution for improved spectator comfort, without the expense of a fully enclosed roof
- Roof Ready – the ability to accommodate a closing (retractable) roof at a later date
- Complimentary to the current events and uses at Evraz Place
- Flexible revenue generating accommodation to respond to future needs and opportunities
- Improved spectator experience
- Sensible sustainability specific to the Regina context – a balance of cultural, economic, and energy metrics
- Sufficient technical analysis to support the viability of innovative solutions
- Suitable for stadium concerts

2.0 General

2.1 Background

Design formally commenced on the Stadium Project on 28 May 2012 with significant preparatory work in the preceding weeks. A two week start-up workshop was held from 11–22 June in Regina. This workshop began the process of understanding stakeholder needs and constraints. This generated many issues and options including: capacity, bowl design, roof design and site planning. An Options Report was issued on 28 June. A stadium precedents tour in August further informed the brief and in particular the hospitality content. Further stakeholder discussions occurred in September and November to finalize the concept design.

2.2 Team

The City of Regina has executed a service agreement with Mott MacDonald Canada Ltd. (MMCL) to provide Engineering and Architectural Advisory services, and P3 advisory services for the replacement of the Mosaic Stadium at Taylor Field. MMCL have in turn retained Pattern Design to provide the architectural component - they are co-located in Mott MacDonald offices. Other sub consultants have been appointed in minor support roles.

In addition the City has appointed Z.W. Group/PC Sports as project managers, and Deloitte as Financial Advisors. WC Caruso & Associates have been retained as a Food and Beverage advisor, and a market study has been commissioned by the Roughriders.

2.3 Report Purpose

This Concept Summary Report is based on a larger, more detailed report. The full report contains information that could compromise the procurement process, so this summary report was developed to ensure sufficient information is available for decision making. Some details have been edited and other more technical details have been omitted, however the overall concept is accurately represented in this report. This report identifies the conceptual design elements that are expected to be feasible within the budget limitation.

The final design will be completed by the successful consortium after a Request for Qualifications and a Request for Proposals procurement process. The Request for Qualifications process will be open to any proponent who wishes to submit their qualifications. The evaluation will be based on proponents' qualifications, project experience, and financial viability. Three proponents will be shortlisted through the Request for Qualifications process and will be invited to develop and present their concept and financial plan through a Request for Proposals process. During the tender period, the three shortlisted proponents will be allowed to meet with the stadium project team to refine their proposals. The evaluation will be based on meeting mandatory requirements, their ability to provide recommended or optional requirements, and their financial plan to implement the project.

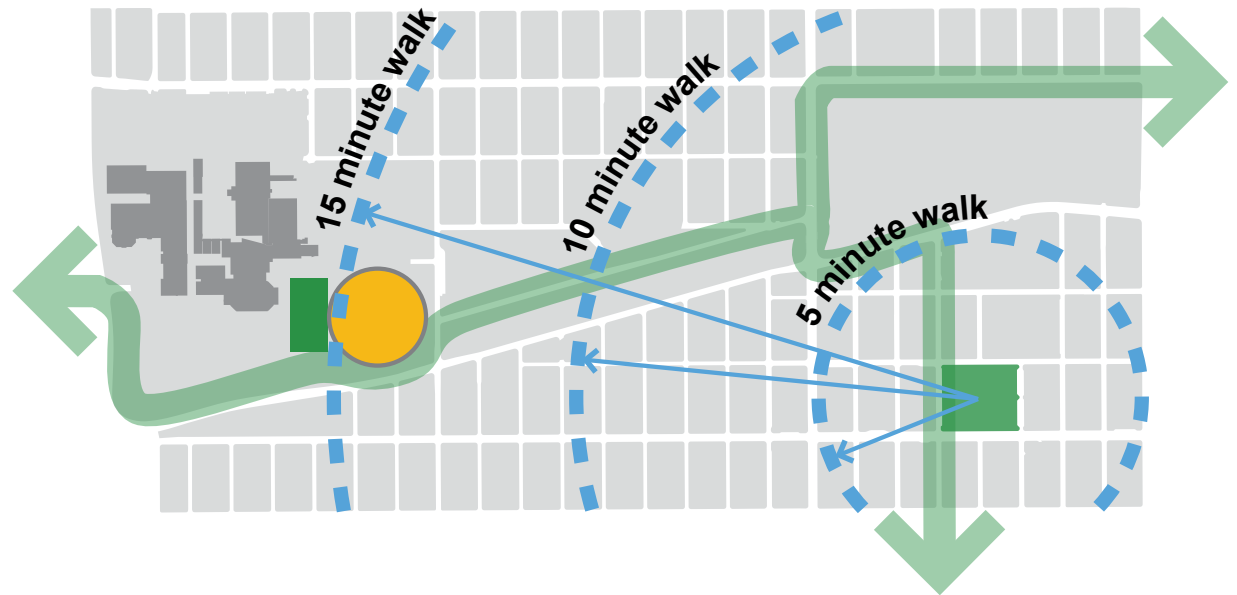
The selected consortium will design, build and provide initial financing to the project. They will not be required to use any aspects of the conceptual design presented in this report unless they are identified as mandatory requirements in the Request for Proposal. Mandatory requirements will be agreed to by all stakeholders.

2.0 General

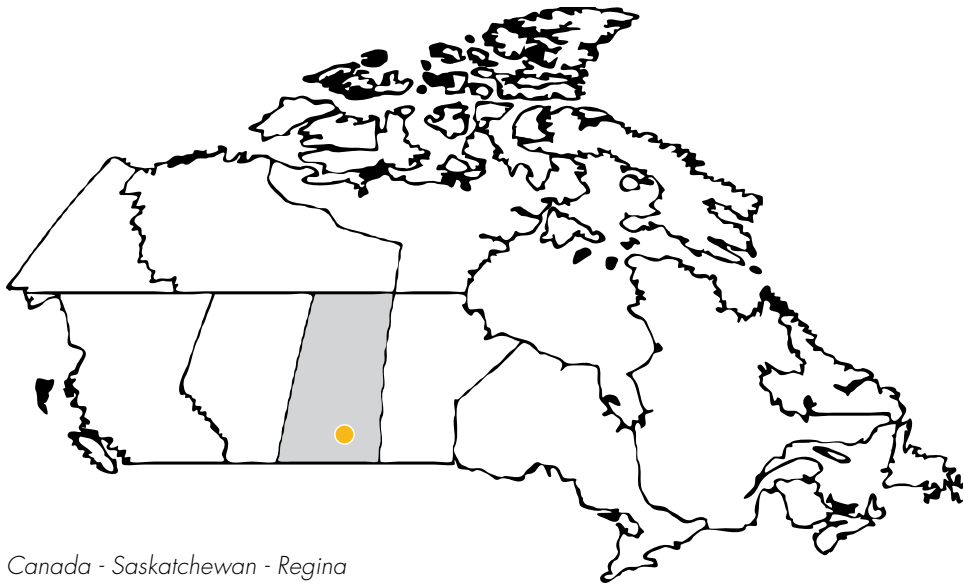
2.4 Location

The new stadium site is at Evraz Place. It is served by Lewvan Drive, Dewdney Avenue, and Elphinstone Street. The Canadian Pacific Railway runs along the southern boundary.

Pedestrian connections are indirect. A direct walk from downtown would be about 15-20 minutes.

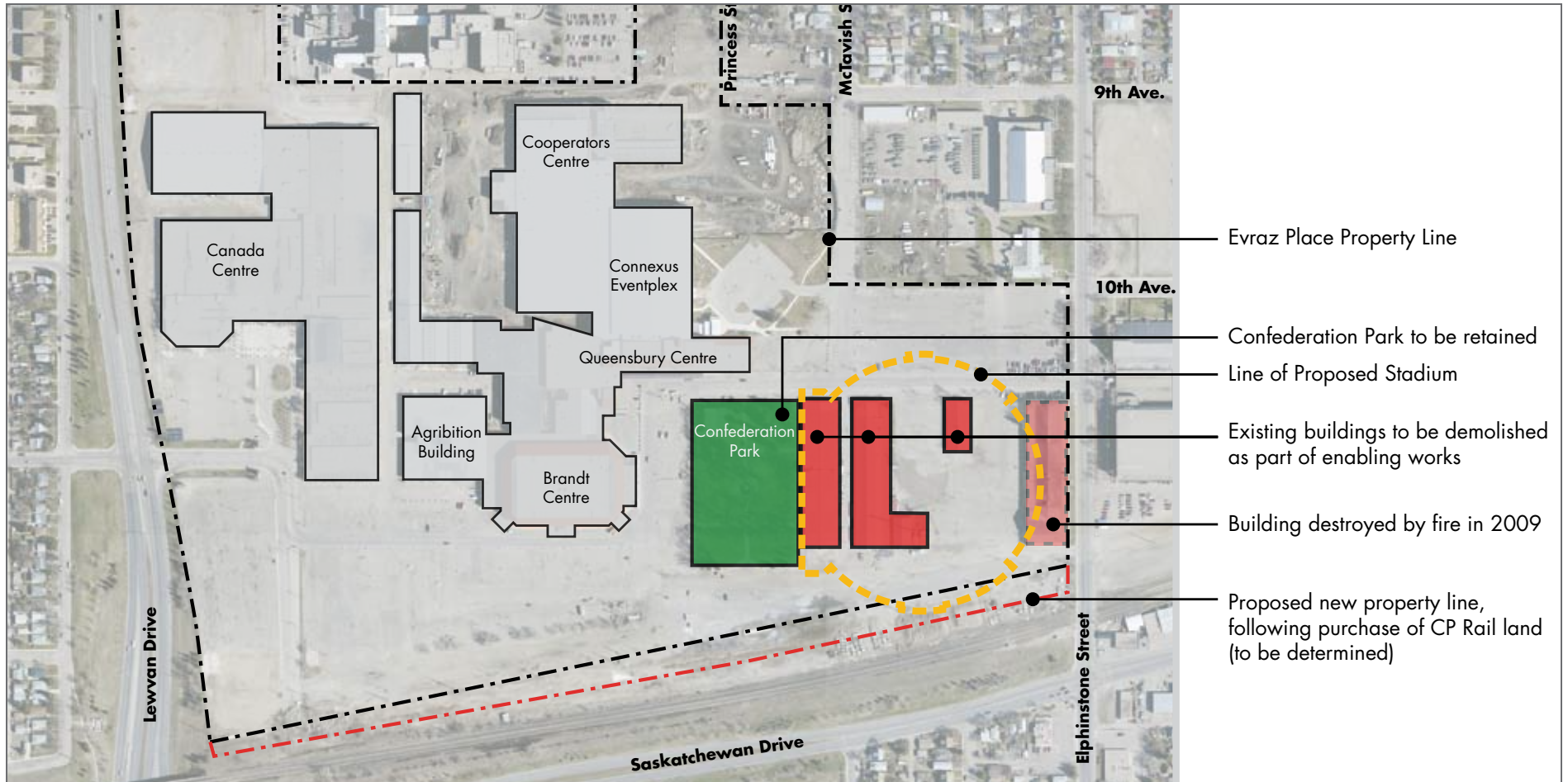


Evraz Place is a 15-minute walk from downtown



Canada - Saskatchewan - Regina

Existing Site



Existing site plan

3.0 Brief

3.1 History & Demographic

3.1.1 Roughriders

Based on the June workshop we have understood that the Roughriders have an established and loyal fan base with a broad demographic mix. This fan base needs to be maintained and broadened through the design. Some general information:

- Roughriders have been in existence for over 100 years.
- They play 10 home games (9 regular season and 1 preseason game) with the possibility of a home playoff game.
- Saskatchewan hosted the Grey Cup in 1995, 2003, and will host again in 2013.
- Over the past 10 years, they have averaged 27,500 fans at Mosaic Stadium. More recently the average is over 30,000 (32,000 in 2012).

A detailed accommodation programme has been received and this allowance has been incorporated into the conceptual design document. This has evolved over this phase and is subject to review from the results of the marketing and catering reports.

3.1.2 Evraz Place

Evraz Place, formerly known as Regina Exhibition Park, is a long-established venue for fairs and exhibitions in the city. As the major events site in Regina, Evraz Place houses a major new sport and recreation complex, a trade and convention centre, and the recently renovated 6,000 seat Brandt Centre arena. There are numerous other buildings on the site, some of which are designated for demolition, refurbishment or replacement.

Evraz Place has been the host of many major national and international events such as the Tim Horton's Brier, World Junior Hockey Championships, Memorial Cup, and in 2013 will host the Juno Awards and the 2013 Grey Cup festival. The major annual events are:

- Canada's Farm Progress Show (annually in June)
- Canadian Western Agribition (annually in November)
- Queen City Ex (Annually in August)

In its flexible, multi-purpose facilities, Evraz Place attracts over 2 million visitors annually for various events including Regina Pats WHL hockey games, concerts, trade shows, conventions, tournaments, community sport and recreation activities. Soccer is played from October to April and hockey for most of the year. There is on-site parking for approximately 4,000 vehicles.

The new stadium needs to operate independently and as an integrated facility to maximise utilization of all venues.

3.1.3 Other Users

Several other groups use the existing Mosaic Stadium and they will move to the new venue with the Roughriders. The principal secondary users are:

- University of Regina Rams (University Football)
- Regina High Schools Athletic Association
- Thunder Football (Junior football)
- Other users could include football camps, touch and flag football programs and field hockey

These users have small crowds of between 500 – 4,000 and their major requirement is appropriate changing rooms. It was agreed in a workshop with these users on 21 June 2012 that the new stadium would have four changing rooms in addition to the two main football changing rooms to accommodate these users. A request was made at that meeting to address their small crowd size and if possible provide some indoor support or hospitality space in the lower tier seating. There are a number of spaces that are suitable for their purposes at field level and on the Main Concourse.

As much as possible, given the space requirements and budget, the stadium (including lounges, concourses and back of house spaces) will be designed to be multi-functional to accommodate seasonal and all-season non-sporting events such as concerts, meetings, conferences, trade shows, social functions and special events.

Although at a very preliminary stage of proposal development, access by amateur sport to the stadium's playing field, training spaces, and meeting rooms will be enhanced, including provision of administrative space.

3.2 Working Brief

3.2.1 Summary

The Brief used for the Concept design can be summarised as follows:

1. 33,000 permanent seats with temporary expansion to 42,000
2. A sunken bowl design
3. Improved hospitality content
4. An open air environment protected with a spectator roof and provision for some localised radiant heating
5. An artificial field
6. Principally to host CFL Football Games with ability to host FIFA Soccer matches and appropriate compliance to FIFA technical requirements (field size, changing room, and sports lighting).
7. Part of the venue (Rider Store and other uses) for 6-7 day week use
8. Open concourses with field views
9. Dedicated Roughrider space including business and administration space, changing and training facilities.
10. Ability to divide non-Riders changing rooms into smaller changing rooms, and additional changing rooms for community use.
11. Multi-use capability in the lounge spaces, concourses, and catering abilities to support new activities.

A detailed room schedule will be produced in the next phase.

3.3 Segmentation

The audience segmentation has been evolving and will be confirmed in the next phase. The concept design illustrates the following split:

General Admission (GA)	87.7%
Lounge Seating	3.3%
Suite Seating	2.9%
Club Seating	6.1%

4.0 Design Criteria

4.0 Design Criteria

4.1 Guides & Codes

Below is a list of codes and guidance for the design of the Stadium Project. In some instances a precedence approach will be proposed to the City of Regina Building Standards Branch, where the project will benefit (e.g. in the case of seismic design criteria) without compromising quality or safety. Where this occurs, it will be through agreement with City of Regina Building Standards Branch for each item.

4.1.1 General

The principal codes governing the design of the Stadium Project are:

- National Building Code of Canada – NBC 2010
- National Fire Code of Canada – NFC 2010
- National Plumbing Code of Canada – NPC 2010
- National Energy Code of Canada for Buildings – NECB 2011
- Saskatchewan Code Adoption Guide 2010 (Gives local amendments to National Codes)
- The Uniform Building and Accessibility Standards Regulations – Statutes of Saskatchewan

4.1.2 Sports Specific Guidance

Stadia have a number of specific international codes and guidance documents that are in addition to the national building codes. The following are proposed for this project:

- CFL Technical Requirements 2012 (in draft)
- CFL Operations Manual 2011
- CFL Grey Cup Operations Manual 2011
- FIFA's Football Stadiums (FIFA Guide) Technical Recommendations and Requirements Edition (Full compliance is not advocated, parts to be adopted include changing facilities, field dimensions and sports lighting).
- ADA document on Accessibility Requirements of New Stadiums
- Guide to Safety at Sports Grounds "Green Guide" Fourth Edition.

4.1.3 Structural Guides and Standards

Including the following:

- Canadian Standards Association - Design of Steel Structures Standard S16-09
- Canadian Standards Association - Design of Concrete Structures Standard A23.3-04
- Guide to Safety at Sports Grounds "Green Guide" - Fourth Edition

4.1.4 Building Services Guides and Standards

Including the following:

- ASHRAE Handbook 2012 (HVAC)
- IESNA RP-6-01 Sports and Recreational Area Lighting
- IEEE Colour Books
- Canadian Electrical Code – CEC 2012
- Industrial Ventilation Manual (Published by ACGIH)

All site services will comply with the City of Regina Development Standards Manual and by extension the National Plumbing Code, NFPA 1142, etc., as well as Building Site & Parking Lot Drainage Requirements.

4.1.5 Fire Design Codes and Standards

Including the following:

- BS 7974, The Application of Fire Safety Engineering Principles to Fire Safety Design of Buildings – Code of Practice, 2001, or NFPA 101, Life Safety Code, 2012.
- Fire Engineering will follow the methodology outlined in BS 7974 or NFPA 101

4.2 Environmental Conditions

4.2.1 Environmental Design Criteria

Winter Outdoor Design Temperature:

-34°C (-30°F) January 2.5%

Summer Outdoor Design Temperature:

31°C (88°F) dry bulb, 70°F (21°C) wet bulb July 2.5%

Elevation: 575m

4.2.2 Internal Space Conditioning

The stadium is an open environment prioritising shade and air movement in summer and minimising air movement and permitting solar incidence in fall and winter.

The following spaces shall be air-conditioned:

1. Corridors, Lounges, Suites and associated Foyers.
2. Enclosed Support Areas – Control Room(s), Media, Players' Accommodation, Kitchens, and Offices.
3. West Club Concourses.

Internal spaces will be provided with sufficient heating, cooling and ventilation to meet the requirements of the occupants and processes occurring within each individual space.

Notwithstanding the potential future provision of a roof and radiant heating (bowl and concourse), the remainder of the stadium will be exposed to the elements and treated naturally (albeit with the provision of passive measures such as solar shading and wind protection).

4.2.3 Roof-Ready Conditioning Provision

The current concept design can accommodate a fully enclosed roof in the event that this is desired in the future. The principle is based on an overlay type solution where the additional structure and associated servicing (e.g. MEP plant rooms) are independent to the base design.

Initial analysis has indicated that if the entire stadium were enclosed and conditioned to that of an internal space, the increase in required mechanical equipment rooms would be in the region of 41% for heating and 33% cooling. However, given the local climate, it is more appropriate that an enclosed bowl has heating equipment only to temper incoming air.

Irrespective of the final form of any future roof, a diversification of supply would be applied to suit the operation of the stadium as a whole (i.e. the bowl and concourse would not need to be at full capacity concurrently and, as such, services could be proportioned to accommodate the servicing needs of certain areas at specific times).

4.2.4 - Provision for Multi-Functionality

Modular provision of heating, cooling and ventilation equipment and the associated distribution systems is required to allow areas to be used in a versatile and independent manner to suit the functional requirements of each space. To maximise versatility, the above systems will incorporate zoning and intelligent system control and monitoring.

4.3 Spectator Facilities

4.3.1 Viewing Space Projections

4.3.1.1 Row Depth

- All GA Rows shall be 33" (840mm)
- All Club Rows shall be 36" (915mm)
- All Suite Rows shall be 42" (1070mm)
- Rows at the front of a GA or Club tier (adjacent to a balustrade) shall be 40" (1015mm)
- Suite front rows shall be 46" (1170mm)

4.3.1.2 Seats

- All seats shall be fixed, tip-up style to create clearways in accordance with the regulations (loge seats may be better loose).
- GA seats shall be spaced at 20" (510mm)
- Club seats shall be spaced at 22" (560mm)
- Suite seats shall be spaced at 24" (610mm)
- Temporary Seating shall be spaced at 18½" (470mm)

4.0 Design Criteria

4.4 Viewing Standards

4.4.1 General

The viewing criteria are a careful balance between proximity, subtended angle of view and C-value to achieve the best possible sightlines for a stadium of this size. C-values will be a minimum of C60, as defined by the CFL, with the majority (circa 80%) over C90.

The maximum tier angle shall be 35.5°.

There is no guidance on highball sightlines for CFL. Generally, as such a highball sightline of 30m centre shall be observed.

4.4.2 Front Row Offset

The CFL field dimensions are observed which can also accommodate a reduced FIFA auxillary area (agreed directly with FIFA by Pattern for Al Ain Stadium). A full FIFA auxillary area could be used but this would be wider than required for CFL. There was an express desire at the initial workshop to get spectators as close as possible to the field.

4.5 Concourse & Sanitary Provision

4.5.1 Concourses

Predicted concourse occupancy is assumed to be 100% in line with the Canadian Code and CFL Technical Requirements.

Therefore, concourse allowances are as follows:

GA Concourse	3.2 ft ² (0.3m ²) /person
Club Concourse	3.8 ft ² (0.35m ²) /person

4.5.2 Sanitary Provision

The CFL guide has sanitary ratios and these vary from GA to Club. These could be used, but a more globally tested code is the FIFA Guide. This exceeds the CFL code and is universal for all seat grades. Hence the FIFA criteria are used for sanitary provision to give a better service level.

The key variable is audience profile and variability. The Riders' current crowd is diverse and other events may attract even crowds. To allow flexibility for these scenarios, the ratios are:

Male:	Female:	Switchable
60%	40%	10%

It is possible that some events (e.g. a concert) could have a majority female crowd. If this is the case, the client should confirm the revised ratios to be used. In this event, the female ratio would rise, adding cost.

4.6 Vertical Circulation

There is an established principle of ramp access in the majority of North American football stadia. Mosaic Stadium and most of the venues visited on the stadia tour have ramp access.

Depending on the stewarding / ushering strategy, elevator use will generally be restricted to mobility impaired users, security, evacuation, goods and fire-fighting needs. Suitable lobby clearances and fire protection will be provided.

Dedicated Goods / Service elevators will be provided to transfer goods and waste. 'Clean' and 'Dirty' segregation is important especially for the transfer of food and other sanitised materials. The sizes of these elevators are dependent on the stadia operator's requirements and are to be determined.

Escalators are increasingly common to improve comfort and ingress – egress times. Bi-directional Heavy Duty 1000mm wide escalators operating in 'Tidal' Modes (upwards at the start of the games and downwards at the end of the games) are proposed.

The proposed vertical circulation strategy is as follows:

Lower Tier:

- At-grade entry

Club Tier:

- Escalators on west side
- Ramps on east side
- Provision for future escalators
- Elevators also serve this level on both sides for wheelchair spectators

Suite Level

- Elevators and Escalators

Upper Tier

- Ramps
- Elevators also serve this level for wheelchair spectators

4.7 Catering & Merchandise

4.7.1 General

Merchandise and catering is becoming increasingly complex in modern stadia design. The overall concept needs to be driven by the client with input from their market study advisors and the selected catering provider. Key issues include:

- Spectator profiling
- Electronic/smart ticket purchase and loyalty programmes
- Local preference and tastes
- Market level for general and suite/club spectators – food and beverage range/type
- Non-match opportunities; museum, stadium tours, concerts, other sports and conferencing
- Replica shirts and memorabilia
- Load time of stadium and increasing the overall event time by attracting spectators early and retaining them after play, to increase revenues.

The assumptions for merchandise and general spectator catering will be reviewed and incorporated into the next phase.

4.7.2 General Admission (GA) Spectators

This is a broad categorisation and defines all spectators who are served by a concourse i.e. they do not have a lounge or suite-based hospitality provision associated with their seat.

Within this, there is a subdivision based on the quality of view. The best seats are those in the Club level, followed by the Lower Tier (side then ends) and finally the Upper Tier (although some fans may prefer these to Lower Tier end zone seats).

The proposed stadium has been developed to allow segmentation flexibility. For example the East Club tier could be upgraded to provide a 'club' level offer; either as in the West or at a level between GA and Club.

Concessions shall serve all GA and Club spectators. Again this is a broad offer. At West Club level these would be higher end to suit the internal conditioned environment.

4.0 Design Criteria

4.8 Hospitality

The following approximate area allowances have been used:

- Lounges: 12 - 32 ft² (1.2-3m²)/person, to cater for a range of offers from standing cocktail style to seated dining.
- Suites: 12 - 23 ft² (1.2-3m²)/person
At some venues a row of seats are sold on the inside of the suite. The area/person is based on the external seats. Adding internal seating will reduce the space standards.

The suites and lounges shall be serviced by satellite service kitchens or integral serving counters fed by a single main kitchen. The main kitchen needs to be sized based on the level of service and number of covers by the catering consultant. The overall area can accommodate long term demand for an expanded lounge offer. The equipment level shall be appropriate for the offer defined above.

Where possible, an external space or terrace is provided to each lounge. This provides flexibility, reduces the amount of internal (conditioned) space required and makes the most of the very pleasant climate for the majority of the football season. All lounge and suite ticketholders shall have a seat in the bowl. Suites shall have moving glazed partitions to allow spectators to choose whether their seats are external or internal.

4.9 Ticket Office & ATMS

It is assumed the stadium will have provision for auto teller machines (ATM) and smart ticketing.

4.10 Special Interest Groups

4.10.1 Spectators in wheelchairs

The number of wheelchair spaces provided is a continually changing ratio. International best practice is to provide the same choices as for able-bodied spectators. A demand study will need to be undertaken in the next stage.

This provision shall be:

- Uniformly distributed throughout the venue at all grades and locations.
- Created with demountable elements to allow flexibility to reduce or increase positions in line with actual demand.
- Integrated into the adjacent seating with a companion seat.
- Power for electric wheelchair recharge.

As the majority of seating is via an open concourse, demountable wheelchair platforms can be implemented without alteration to the base construction. Wheelchair spaces in the upper tier will be through adapted vomitories (entrances through the seating tier, rather than from above it) which afford wheelchair access to wheelchair platforms.

4.10.2 Seasons Tickets/Supporters Club

There shall be no specific provision assumed for season ticket holders or members of the football club. One of the lounges will be the basis for such a facility if required in the future.

4.11 Ticketing, Ingress and Egress

The Entry Capacity shall be calculated in accordance with relevant Canadian codes and international best practice.

The design shall be based on a manual ticket check by stewards. Power and data provision shall be provided for future turnstile installation. A portal shall be provided for this and unfilled with ingress gates (restrained outward opening) to allow stewards to manually manage access control.

Egress shall be through dedicated egress gates. Ingress and egress gates shall be locked and released via magnetic locking mechanisms controlled locally and via the stadium control room.

4.12 Field

4.12.1 Dimensions

The field shall be to CFL regulations; 65 x 150 yards. An auxiliary area has been agreed with them as illustrated. For soccer, a FIFA compliant pitch of 105 x 68m can be provided. The auxiliary area shall be a reduced size as agreed with FIFA so as not to compromise Football spectator proximity.

4.12.2 Quality and Profile

The playing surface shall be artificial turf. The field surround shall be rubber crumb. Artificial fields do not require a crown but most clubs prefer a minimal profile. This shall be agreed in the next stage. If there is a profile (recommended) it shall be a crown with a uniform perimeter rising to the centre.

4.12.3 Field Protection

Many stadia host non-football events that require the field to be protected or removed. There are several options which will be reviewed in the next stage. Built-in or removable systems need to be designed from the outset. Alternatively, rental tile systems can be used without any base provision. The former has a higher capital cost and lower in-use cost. The latter has no capital cost but higher event costs. The business case for non-sporting events should address this issue.

4.12.4 Practice Field

A practice field is not proposed as part of the site plan. While the Riders' programme requests one, it is understood that this is not a requirement if the Riders have access to the field most of the time and, in the event they do not have access to the field, that other Evraz Place facilities can be used for practices.

4.13 Players, Coaches & Officials

4.13.1 General

Many teams will play at the new stadium, including the Roughriders, Rams, Thunder, RHSAA teams and the Regina Riot. Of these users, only the Roughriders will be resident here. All other teams will be resident and train elsewhere i.e. they will not have any permanent accommodation at the proposed stadium.

4.13.2 Players

The Riders' Space Needs Analysis has been used to develop the space allocation for the stadium. Room planning will be developed in the next stage.

The two main football changing rooms shall accommodate 90 players. It is assumed that the Riders' changing room is for their exclusive use.

Three further changing rooms shall be provided as follows:

- Visiting Team for 90-player can be divided into two 45-player units
- Community changing A + B at 50 and 65 players respectively that can be combined into one 80-100 player unit

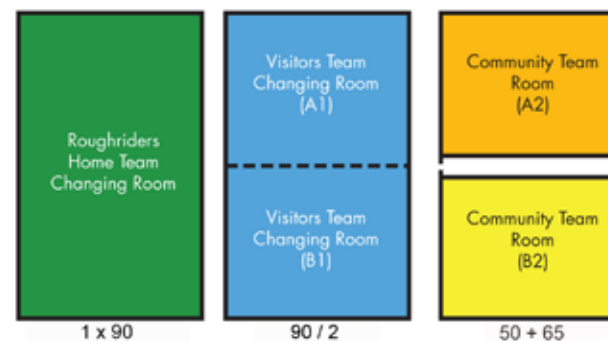
Hence for non-Riders games that require player changing in excess of 40 persons the three units above provide two 90-player units. For events that require double headers (e.g. soccer), the units above are configured as four 40-player units.

For concert use the visitors and community changing rooms can be overlaid as required for green rooms.

4.13.3 Coaches and Officials

Coaches' accommodation shall be as detailed in the Riders' Space Needs Analysis and as required by the other stadium users (i.e. Rams, Thunder, etc.). The coaches' suites will be available to all.

Officials' accommodation shall be in line with CFL requirements. The overall provision of coaches and officials is beyond that required for FIFA. For major (national or international) soccer tournaments it is assumed that some Riders' offices will be made available as required or that temporary offices are created elsewhere; no additional provision has been assumed.



Arrangement of changing rooms

4.0 Design Criteria

4.14 Broadcast

4.14.1 General

The CFL do not have a detailed broadcast guide; the design team are working with them to develop one and the stadium will be the first venue to be designed to this new guide. Ongoing dialogue with TSN, the CFL and the Riders' media team is required to develop a detailed brief in the next phase.

For soccer, the FIFA edition 4 layout will be assumed; the current edition 5 has over 31 cameras and is appropriate for a world cup. If such a match were held at the stadium in the future the additional cameras would be provided as an overlay.

The stadium will have containment for future pre-wiring for broadcast.

4.14.2 Cameras

The camera layout from recent Grey Cup events are being used as a working model; the soccer layout will be optimised as much as possible to be complementary with the football.

4.14.3 TV and Radio Studios

There shall be 1 TV studio and 4 TV/Radio commentary suites. For major tournaments additional overlay studios can be created on viewing towers. The final requirements will be completed in the next stage after consultation with TSN, CFL and the Riders.

4.14.4 Written Press

There shall be a minimum of 50 written press positions in accordance with the CFL guide. Additional positions shall be created by closer spacing and an additional tier up to a maximum of 100 positions; again as per the CFL guide. If this number needs to be increased the client needs to confirm the number required prior to the next phase.

Each position shall be provided with a power, data and TV feed.

4.14.5 Photographers

There is no existing guidance on photographers in the CFL guide. FIFA has a well developed protocol which will be the working model until final arrangements are confirmed with the CFL in the next stage.

4.14.6 Mixed Zone, Conference and Interview

A mixed zone and flash interview arrangement is required by CFL but with limited definition. Again FIFA has a well developed protocol which will be the working model until final arrangements are confirmed with the CFL in the next stage.

The Riders' Space Needs details a media/interview room which has been included in the concept.

4.15 Safety, Security & Operation

4.15.1 General

Our overall approach to match day security and stewarding is to minimise the requirement for police presence; our approach seeks to improve security and safety through passive design, the application of technical security systems, and a bespoke steward briefing/training regime.

This has been discussed with the emergency services at meetings in June and agreed in principle. The City, Riders and Evraz Place were all present. The final security plan needs to be agreed with all parties in the next stage.

No special arrangements have been requested for VIPs. It is assumed the basement access and or site security will meet any requirements for heightened security scenarios.

4.15.2 Control (Operations) Room

A control room shall be provided in the south-east (provisionally) corner at high level with a commanding view of most of the seating bowl and field. Most likely at the top of a viewing tower / video screen structure.

This room shall have ultimate control of the stadium PA, CCTV, fire alarm, access / egress control and video replay systems.

This room shall be supported by a 24-hour secondary security room in the basement, close to the loading dock. Repeat monitors, panels and controls may also be provided in the east entrance foyer.

The control room shall have the capability to monitor the public realm associated with the development, and control vehicle access points to the concourse and basement.

4.15.3 Police

It is assumed all police accommodation is mostly via mobile units; two small holding rooms have been provided as requested by the police.

A dedicated briefing room for stewards, police or security personnel is not provided. It is assumed the stadium bowl or the Riders' auditorium can be used for this purpose prior to use by others.

4.15.4 Ambulance and Spectator Medical

An ambulance will be parked inside the vehicle tunnel for acute player or official emergencies. The wider site also has numerous possible locations for ambulance stand-by.

No spectator medical facility is provided. Spectator's who require extensive medical assistance will be taken by ambulance to a nearby hospital. Basic first aid provision will be via help points through out the stadium and trained stewards. During major events one of the existing Evraz Place venues could be used for a field hospital and/or medical treatment area if required.

4.15.5 Stewards

Most modern venues have moved to fewer police officers and greater numbers of well trained stewards; this strategy is recommended but is subject to dialogue with the Police and stakeholders in the next stage. For many venues this is driven by the high cost of policing.

Within this strategy there will also be intent to minimise personnel numbers through clear circulation, wayfinding and signage. The emergency evacuation system will support this approach through devices such as phased evacuation and voice alarm.

Steward locker rooms have not been provided. It is assumed the existing event staff accommodation at Evraz Place will be used for stewards.

The basement security room shall accommodate 4 personnel. This room shall be occupied 24 hours / day.

4.15.6 Groundsman's Store

A Groundsman's store shall be provided adjacent to the vehicular field tunnel for storage and operation of field maintenance equipment.

5.0 Site Planning

5.0 Site Planning

5.1 History & Context

Regina Exhibition Park, now called Evraz Place, has been an exhibition ground since it held the first territorial fair in 1895. Located west of the downtown, the site is bounded by the Canadian Pacific Railroad to the south, Elphinstone Street to the east and Lewvan Drive to the west. The northern boundary is a combination of adjacent users (hospital and armoury) and Dewdney Avenue.

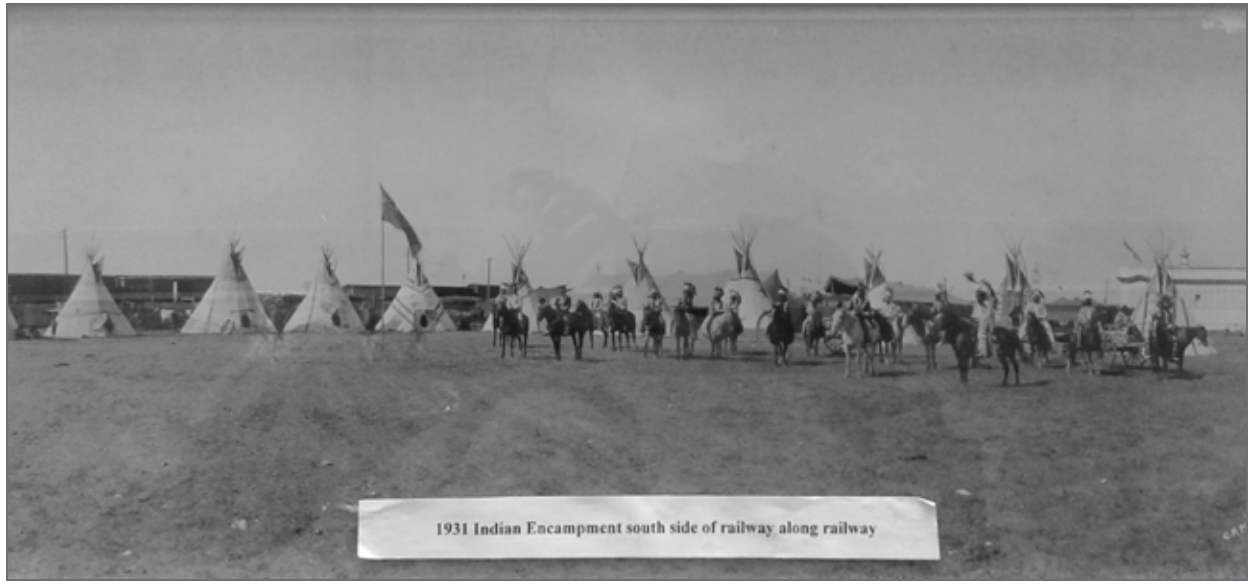
Originally the park was a series of buildings in the neo-classical style arranged around parterred gardens called Confederation Park. These buildings are now gone but the park remains. Evraz Place has undergone continuous change and redevelopment over the past century, and the current master plan for the site includes the removal of numerous older buildings and the consolidation of buildings into an interconnected events complex at the centre of the site comprising: spectator arena, the sport and recreation facilities and the convention centre.

The site is mainly hard surfaced and the venue is a mix of old and refurbished venues; most with low visual appeal.

A heritage study has been undertaken of the Exhibition Grounds which will be considered.



As was: Confederation Building



A 1931 gathering of First Nations on the proposed site (image courtesy of Elmer Eashappie)



Looking north to the proposed site



Looking north to Confederation Park



Concession tents in Confederation Park



Evraz Place hosting the annual "Queen City Exhibition"



Inside the Evraz Place Eventplex



Inside the Evraz Place community hockey arenas

5.0 Site Planning

5.2 Urban Design

In all four directions the site is surrounded by residential neighbourhoods; however the southern and western boundaries have a large scale character owing to the railroad and Lewvan Drive respectively. Elphinstone Street is the most people-focused street retaining an intimate scale and clearly defining the site edge. To the north the scale is mixed and the edge poorly defined.

A significant aim in locating the stadium and planning the site is to enhance the urban setting generally. The boundary conditions and scale are helpful in that they encourage the desired pedestrian priority to the east (towards downtown) and vehicles from the west (major trunk road Lewvan Drive).

The only significant urban asset on the site is the Confederation Park. It is in a degree of disrepair and dilapidation. The fountain is crumbling and the formal parterres are no longer present. However the mature tree planting is significant and would be very hard to replace in the short term. It is the only "people scale" external space on the site.

At a city wide scale the site has poor and unpleasant pedestrian connections to downtown. This makes the distance seem far greater than is the case. The railroad that divides the site from the southern part of the city provides an opportunity to better connect to downtown. The design team recommended a linear park to create a direct pleasant link between the site and the commercial district. This could also extend west and connect to the wider green space, cycle and footpath system. This is now part of the Regina Revitalization Initiative and will be scoped as part of the site preparation work and the infill development project of the current Mosaic Stadium site. The City of Regina Transportation Master Plan has included this concept as well.

5.3 Land Ownership Boundary

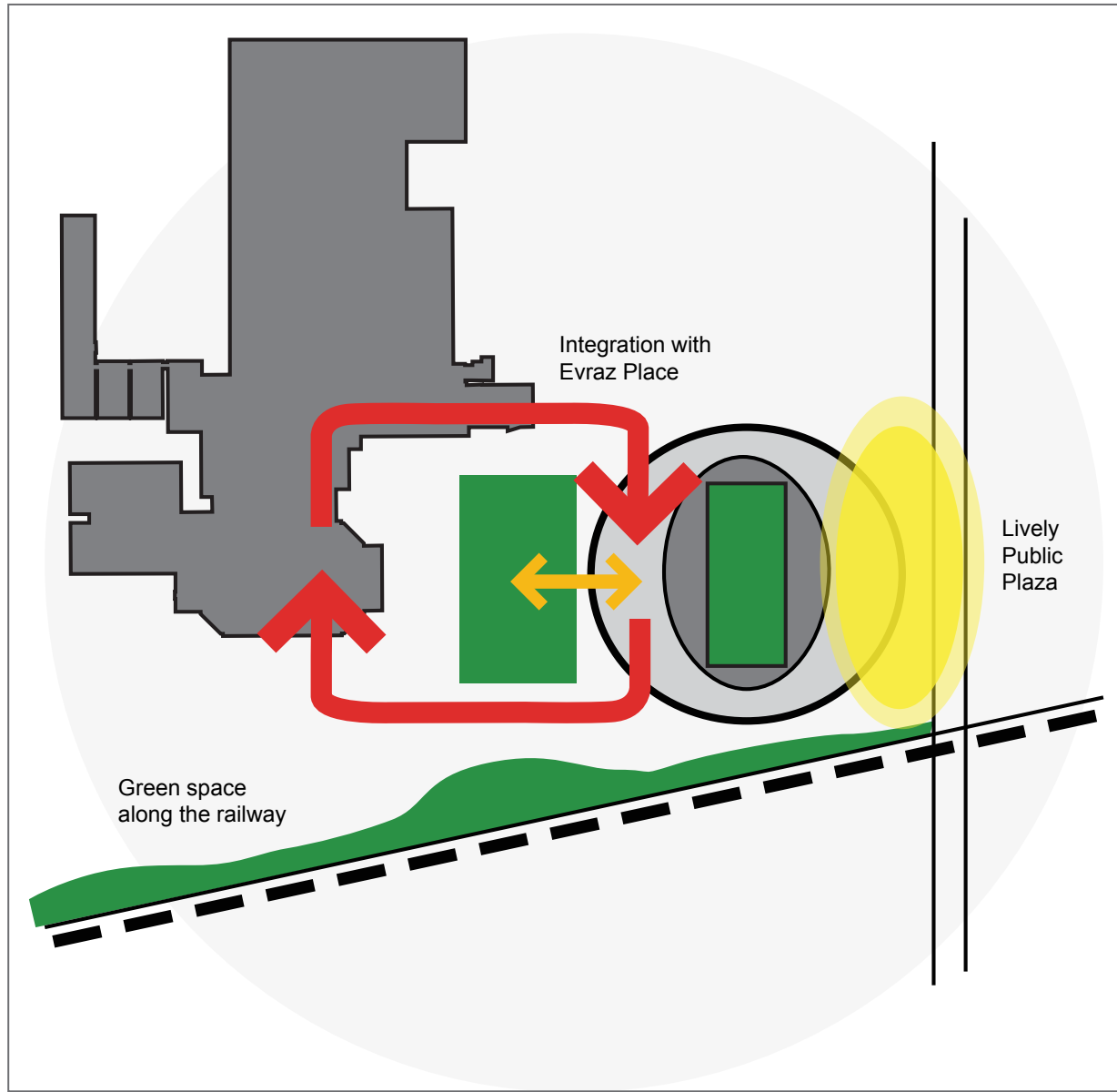
A formal site boundary plan has been commissioned. The Evraz boundary has no practical impact other than to the south. This boundary defines city-owned land and land owned by Canadian Pacific Rail (CPR). Negotiations are nearing completion to purchase part of the CPR land that will result in a wider zone to the south of the stadium which would improve people flow, comfort and the overall urban design aims significantly.

5.4 Stadium Location

Following a study of the various location options, the illustrated location was selected. This places the stadium on axis with Confederation Park (and the Brandt Centre) and it addresses Elphinstone Street to the east. This location has the following benefits:

- Is complementary to the natural pattern of pedestrians to the east and vehicles to the west
- Creates an opportunity for a new public space along Elphinstone Street which will also be a catalyst to regeneration of the neighbourhood
- Positive re-use of the Park and works with the Brandt Centre to enhance the park's setting
- Allows a north-south orientation for the field
- Allows segregated use of the stadium when major shows are on at Evraz and conversely events at Evraz on game days
- Allows for a continuous external concourse to circumnavigate the stadium
- Gives the stadium presence and the opportunity to create a new civic landmark (icon)

High Level Site Plan



5.0 - Site Planning

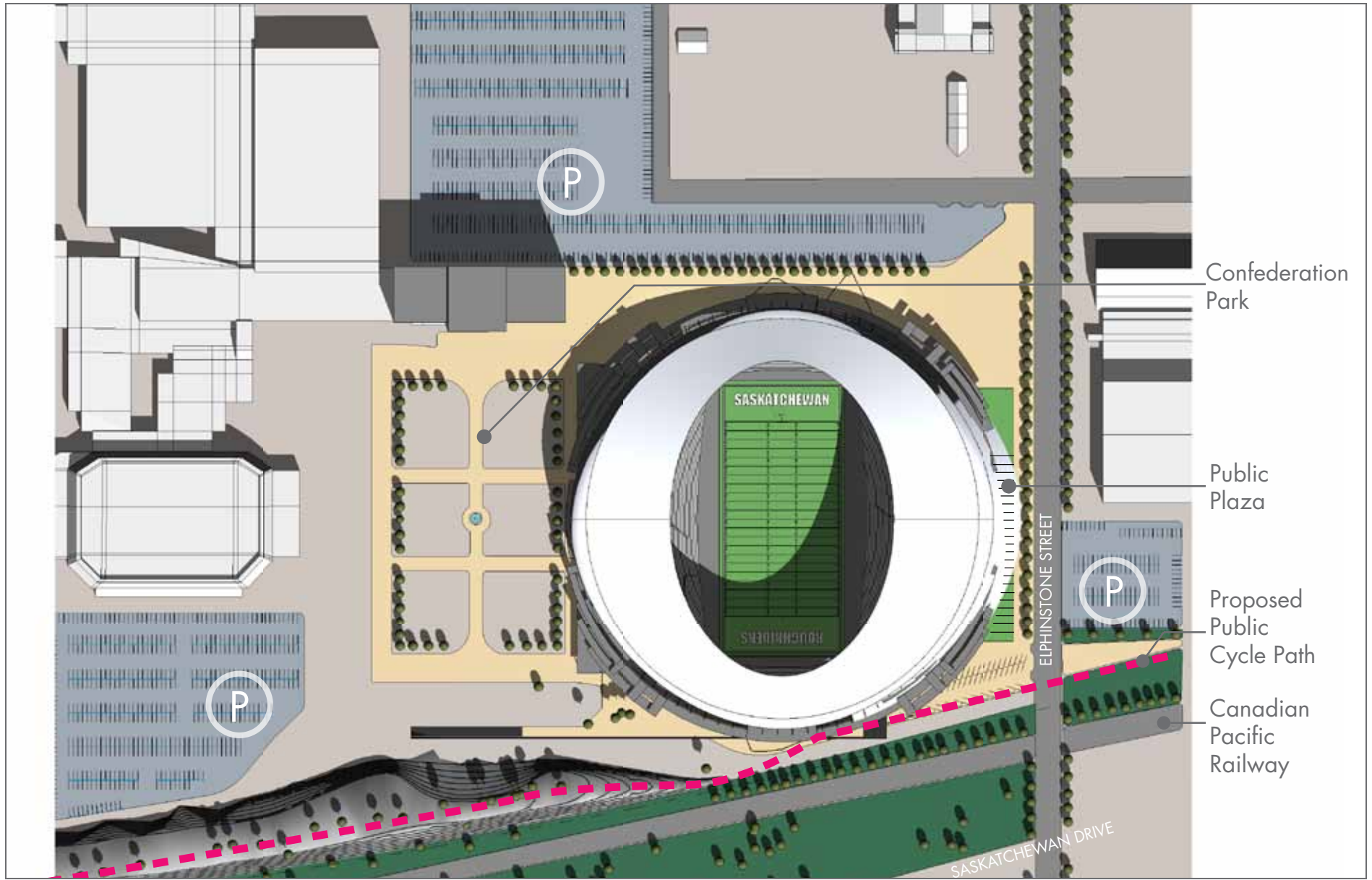
5.5 Site Strategy & Elements

The proposed site plan includes the following features:

- **Confederation Park.**
The park, with its mature trees, is retained and updated for use as pre-game event space, or for other outdoor ticketed or unticketed events. No other practice field is provided as it is assumed that the Roughriders will practice on the stadium field or in the Eventplex at Evraz Place.
- **Green Belt.**
A continuous strip of green provides an edge to the existing Evraz Place, and allows a continuous green connection from downtown to the west of the city.
- **Public Plaza.**
A public plaza will be formed on the east side of the site, providing an entrance area for pedestrians.
- **Continuous External Concourse.**
Continuous external paving around the stadium and Confederation Park allows circulation and gathering space during game days, but can be used for parking or outdoor events during non-game days.
- **Parking.**
Dedicated 24/7 parking for the Roughriders football club is provided for in the south-east corner of the site, while event parking is provided on the Evraz site.

A transportation and parking strategy is being completed that will further inform the details of traffic flow, transit and parking upgrades on the site.

Proposed Site Plan

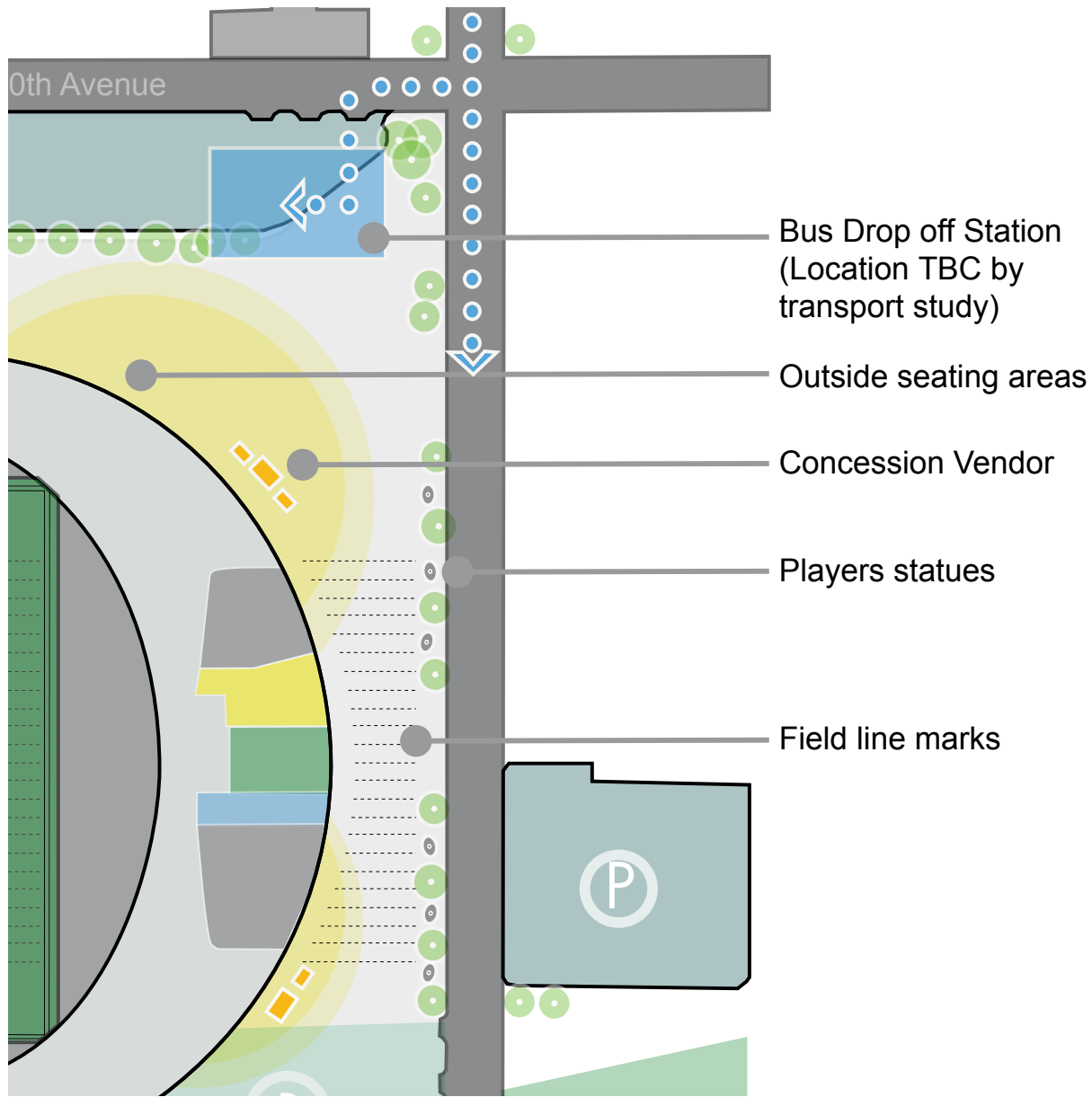


5.0 Site Planning

Confederation Park



Elphinstone Street Plaza



5.0 Site Planning

5.6 Site Circulation

5.6.1 General

As a functioning exhibition centre with massive shows such as Agribition and small scale daily community use, the Evraz complex requires a flexible circulation system.

In the proposed site plan the stadium is placed over under utilised or disused buildings. The major agricultural sheds, Brandt Centre and major indoor halls and rinks are west of this, allowing a clear segregation of stadium users from other users when required.

5.6.2 Pedestrians

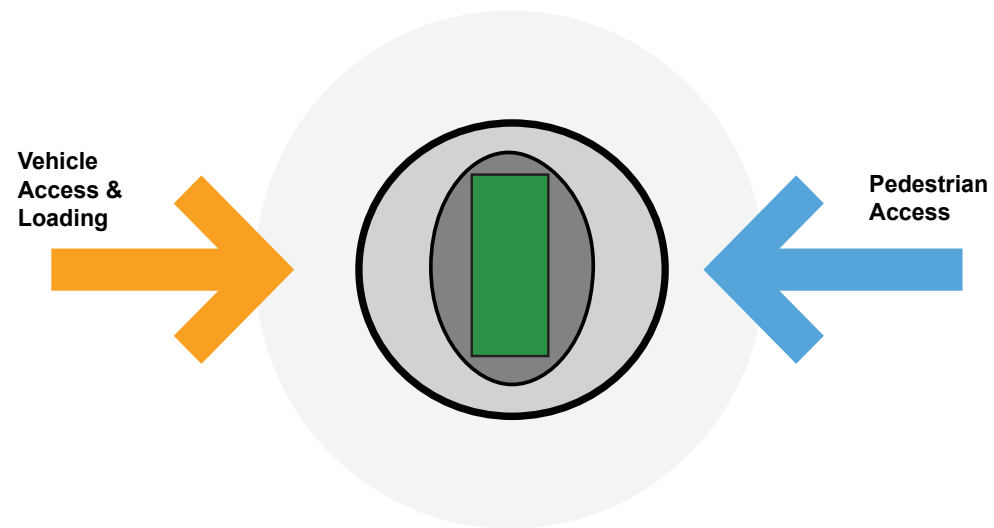
The proposed site plan seeks to emphasise pedestrian arrival and accommodation on the east, and gives vehicles priority to the west of the stadium. To this end, the idea is to create a pleasant public realm that encourages people to walk to the stadium, use the broader amenities and spend longer at the complex. The existing Confederation Park defines the western boundary of the stadium and creates a pedestrian priority environment for the pre-match party; currently at Mosaic Stadium this happens on the practice field.

Once on site, spectators circulate around the stadium on an external concourse. This is intended as an un-ticketed zone; however the section adjacent to Confederation Park could be ticketed if required. This concourse will be designed to feel like a people space but will also support the large vehicles and exhibition use required on non-game days.

Complementing the Park to the east is a covered space creating a sheltered zone prior to entering the internal concourse of the stadium. Spectators enter

on the north-east and south-east corners. Daily visitors enter on the main axis. Stakeholder office users enter via a less prominent lobby on the north-east core.

Spectators in the west can be managed in a number of ways to suit the event. The two key alternatives are directly or via the park. This largely depends on whether the pre-game party is ticketed or free to entry. If free, all users can pass through or enter directly as they wish. In a paid scenario, those attending the party enter via the park and others directly via corner entrances on the colonnade. Although unlikely, if the park is being used for an unrelated event, all spectators could enter via the corners directly. Club and suite entry is via lobbies either side of the main axis.



Primary access concept & site organization

5.6.3 Vehicles

Evraz Place requires vehicle access to as much of the site as possible. The stadium perimeter (external concourse) will have full vehicle access for emergency vehicles and hence is available for operational vehicles. It is assumed that a game day operational plan for vehicles will be developed by Evraz Place in consultation with the Roughriders and other users. On game day we are assuming the external concourse is a pedestrian zone with emergency vehicle access only.

Vehicle and pedestrian movement around Evraz Place will be significantly affected by the location of the new stadium. The Evraz operations are different for each event type (e.g. Arena event, Expo, community ice pad use, etc) and therefore a movement study considering each operation type is recommended to understand:

- On site Parking
- Servicing vehicles
- Emergency vehicle movements
- Pedestrian Movement
- Stadium Egress/Ingress
- Exhibition loading
- Concert loading
- Public transits
- Cycling accommodation

As a general principal the eastern part of the stadium will attract the most concentrated pedestrian usage as it faces the city and is likely to be the location of the store and administration.

The City is encouraging alternative modes of transport on event days such as Park and Ride. The RRI also

now proposes the “Greenway” pedestrian route (recommended by this team) from Downtown to the SE corner of the new facility. Both these initiatives will result in increased pedestrian activity to the east of the stadium; further activating Elphinstone Street from a community perspective. It is therefore prudent to reduce vehicular traffic in this zone and perhaps close Elphinstone Street from the railroad to 10th Avenue on game days. The client’s transportation consultant should address this.

Vehicle entry to the basement is via a single two-way ramp. Prior to a game these are likely to be service vehicles (deliveries, waste, catering etc.). During a game, player buses and emergency vehicles shall be permitted to enter.

The basement has accommodation for semi-trailer positions as requested by the client. A football game and operation can be adequately served by two and even one position. Some stadia have no permanent access semi-trailer or coach parking with vehicles descending to only drop and collect people or goods. If several positions are maintained, one or two could be used by outside broadcast (OB) units. Alternatively all OB vehicles could, and probably should, remain at ground level. The ideal location would be in the car park south of the Brandt Centre adjacent to the Greenway.

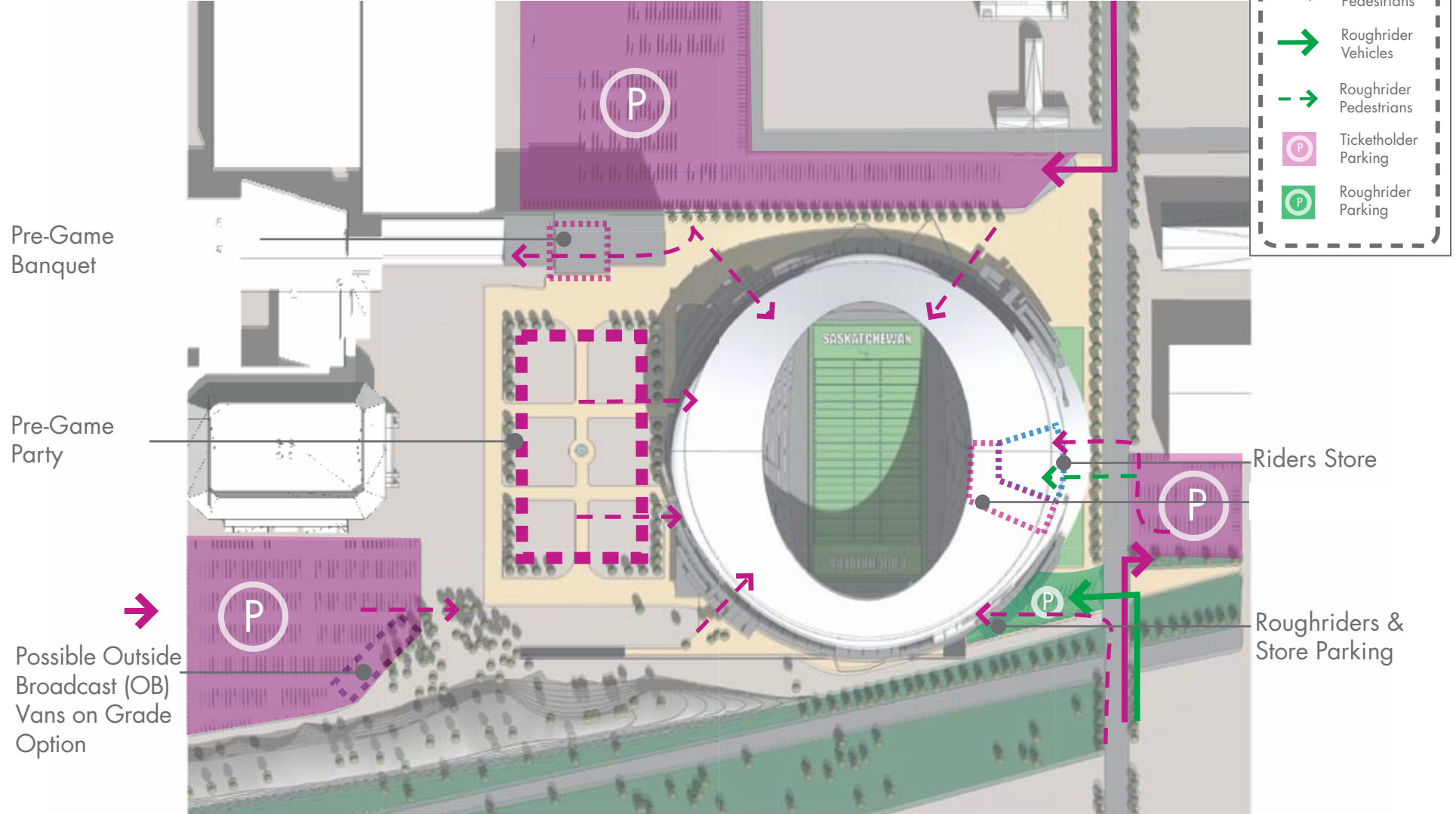
For concerts it is possible to open both field tunnels to vehicles allowing semi-trailers to drive onto the field, unload and exit via the second tunnel. i.e. they have no need to remain in the loading dock.

This strategy is consistent with the overall approach of vehicle entry and accommodation biased to the west. A more detailed vehicle circulation strategy

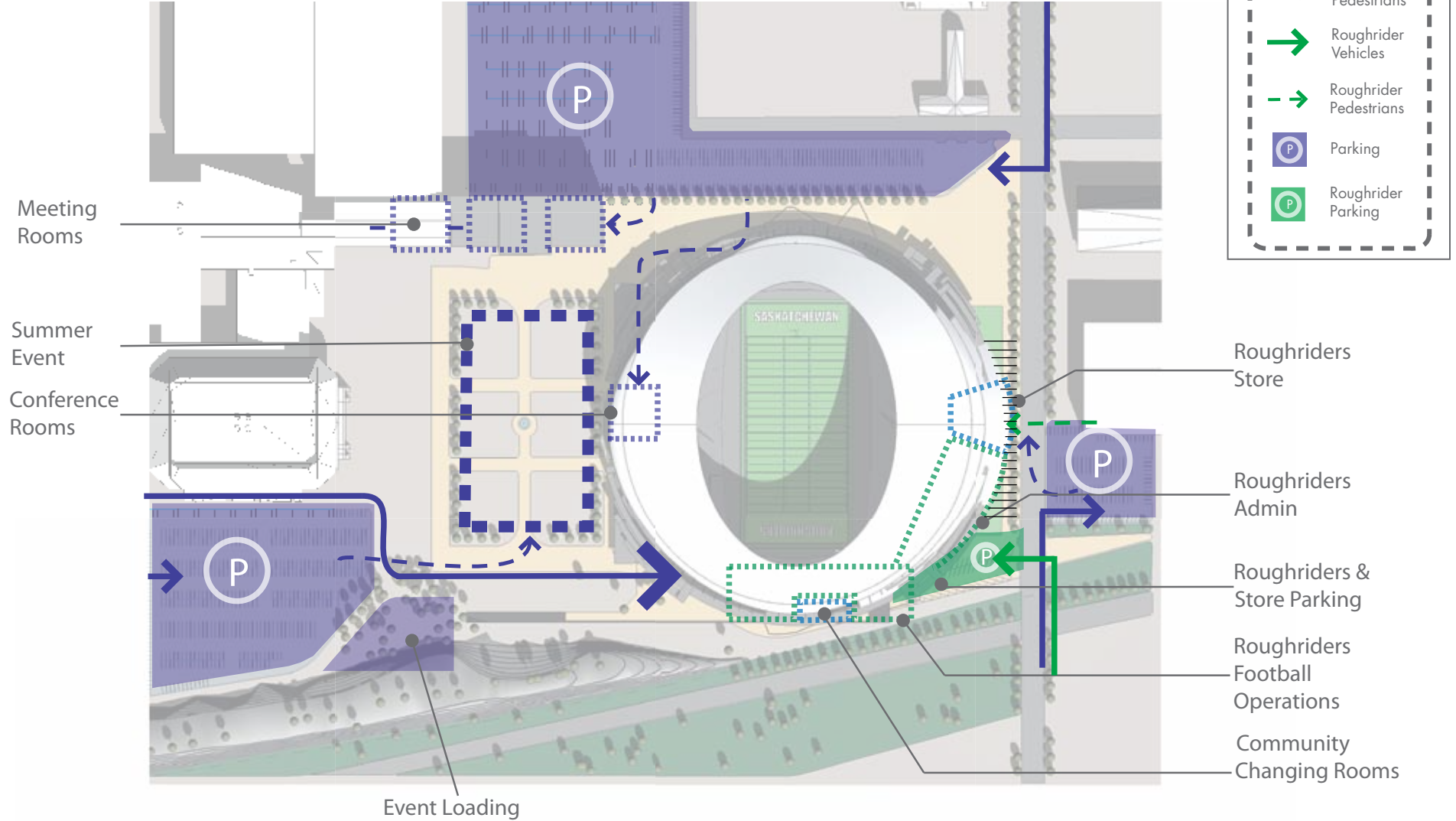
will be developed in the next stage with the City’s transportation advisor. Delivery and waste removal strategy will be reviewed with the F&B advisor.

5.0 Site Planning

Game-Day Access

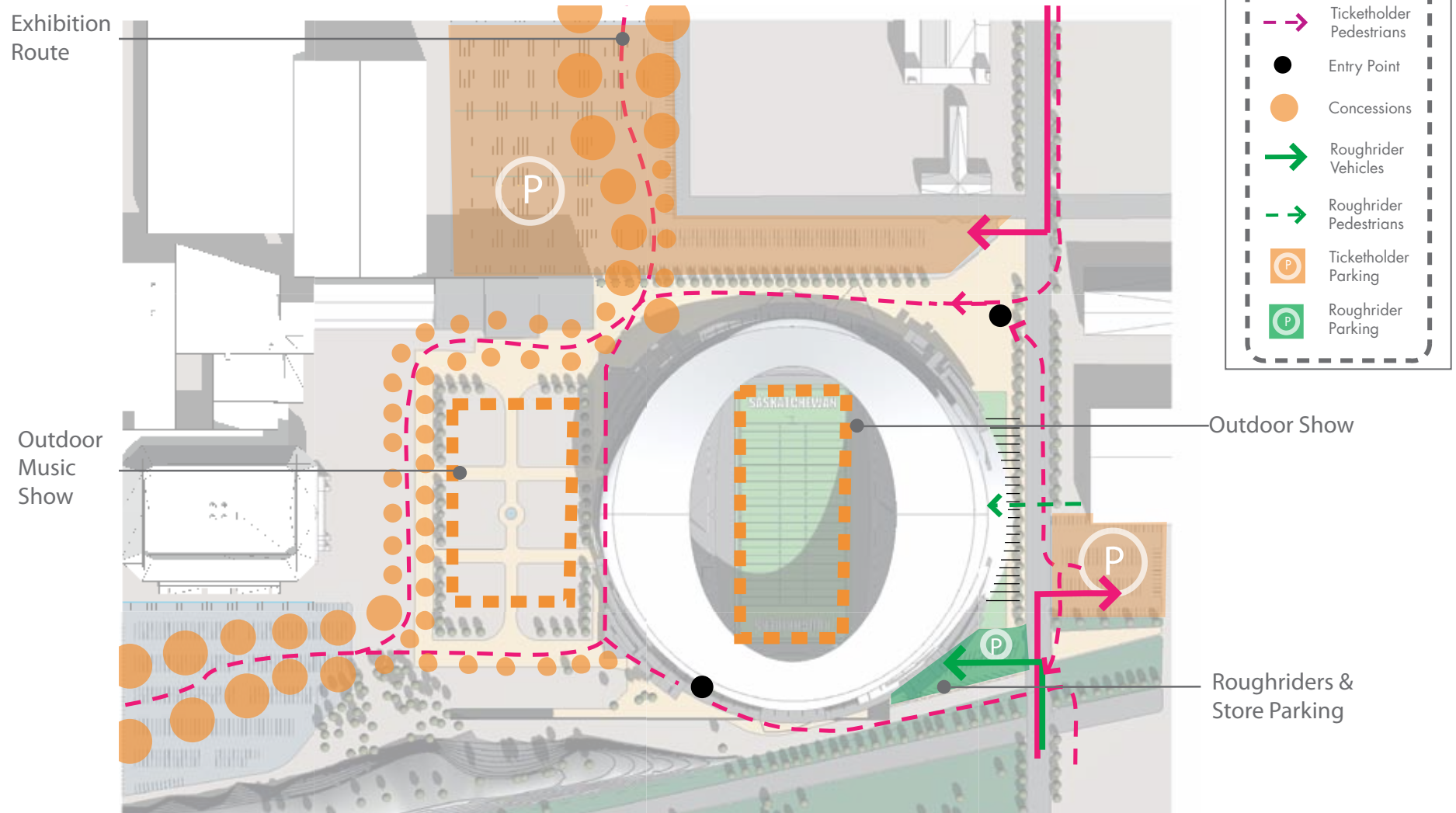


Non-Game-Day Access



5.0 Site Planning

Exhibition-Day Access



5.7 Parking, Transportation & Road Strategy

A comprehensive parking strategy is being developed with the City's traffic consultant. However at a high level the following is assumed:

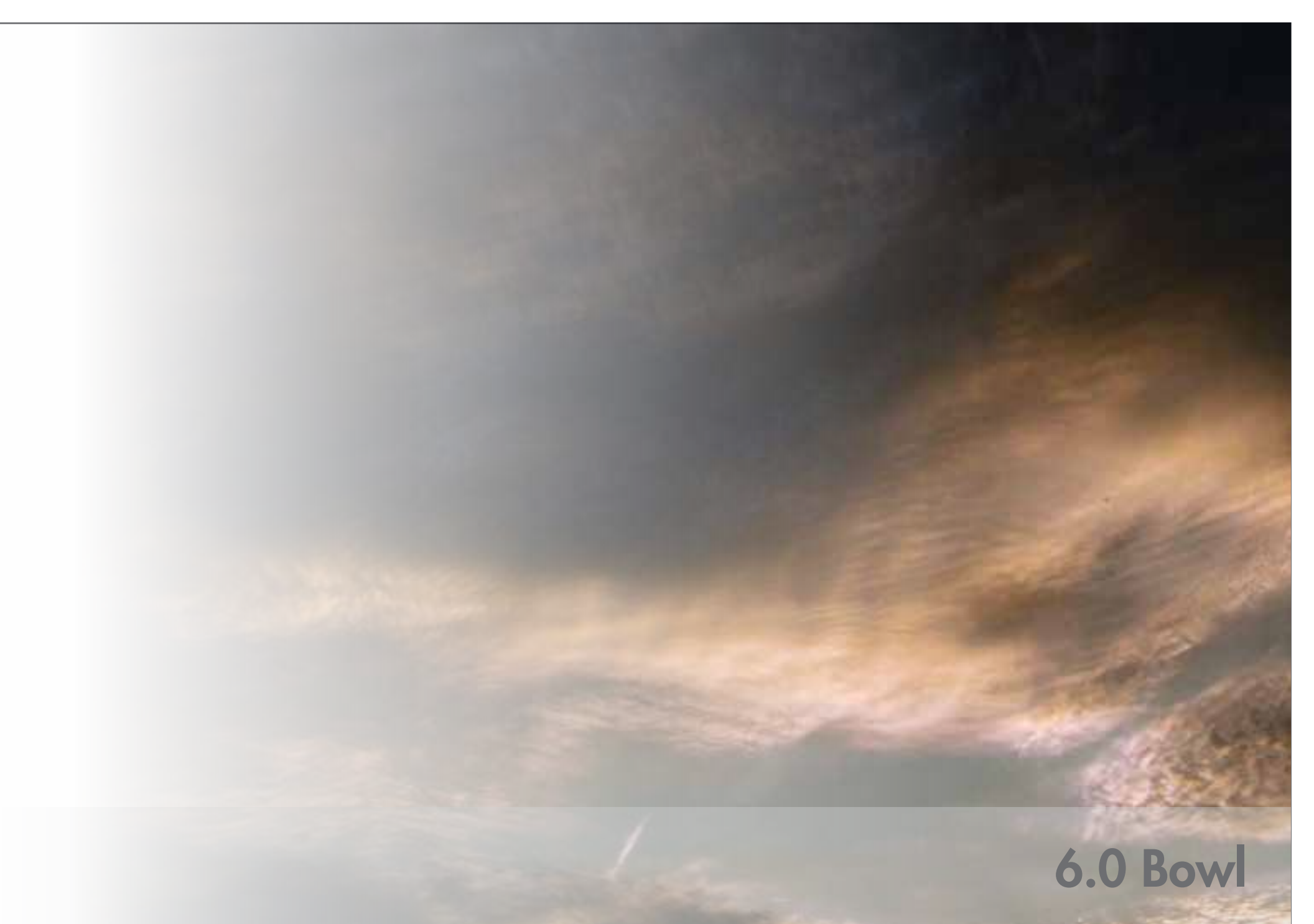
- Primary vehicle access will be via Lewvan Drive
- Elphinstone Street may be closed to traffic on game days. When it is open the primary access will be through 10th Avenue
- Existing Evraz Place parking will be used for game day
- The Roughriders will have 24-hour, 7-day access to their facilities through dedicated parking on the eastern side of the stadium
- Some parking will be provided for the public visiting the Riders' store on the east side of the stadium
- The plaza and Elphinstone Street can be considered a continuous surface that can be closed off for game or other event days. Discreet parking space markers can be used to maintain a public plaza feel to vehicle parking areas.
- A place for bus drop off will be provided on the north side of the stadium



Precedent: Continuous sidewalk / roadway on London's Exhibition Road



Precedent: Discreet parking space markers



6.0 Bowl

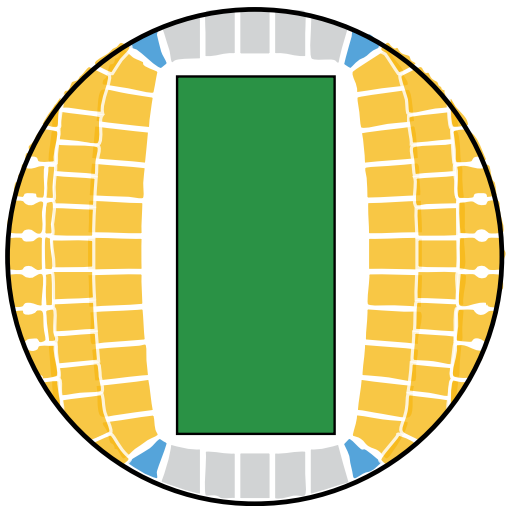
6.0 Bowl

6.1 General

Increasingly in many sports including football and soccer there has been a trend towards greater operational area beyond dead ball and touchlines. This takes the spectators further away from the action. Whilst modern media and match regulation needs to be addressed this must not be at the loss of intimacy and atmosphere.

In the June workshop a very clear direction was given from the Roughriders and all others present, to maintain the current close-to-the-action atmosphere of Mosaic stadium.

Pattern has done exactly this for soccer where a new closer auxiliary area has been agreed with FIFA. For football we are working with the CFL to develop the auxiliary area; for this stage we are working to their minimum requirements.



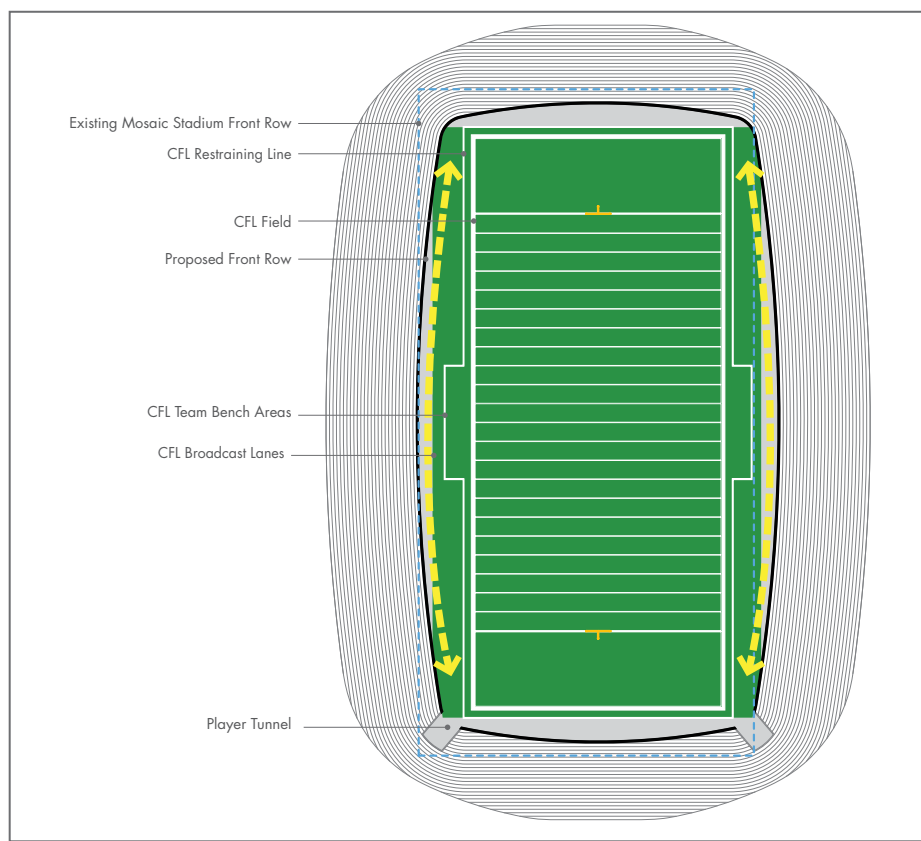
Seating Zone	approx. % of total seats
Sidelines	80%
Corners	5%
Endzone	15%

Plan Distribution

6.2 Field of Play

6.2.1 CFL

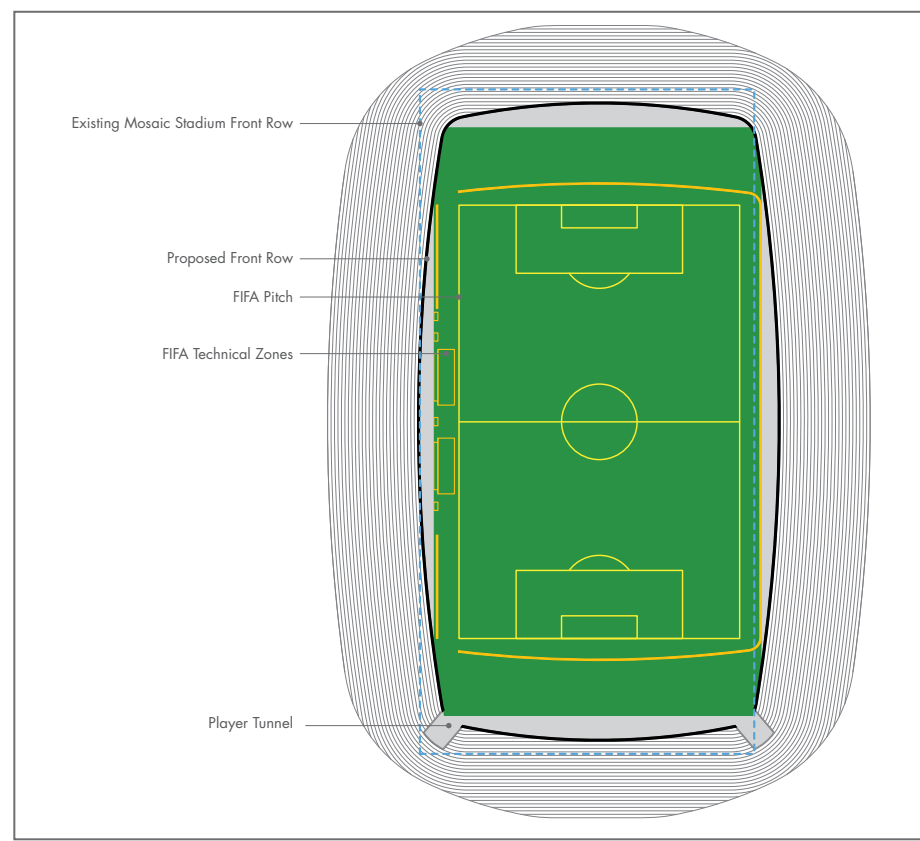
We will work with the CFL to agree on the auxiliary area. In approach, this will be the best balance between the space required for operation and a good close-up spectator experience. The current auxiliary area works to CFL minimums and is well suited to a 'TV' bowl as the space requirement in the centre is greater than at the ends. In the next stage a more pronounced curvature will be investigated to improve atmosphere.



Field of Play as CFL Field

6.2.2 FIFA

The FIFA auxiliary area is 125m x 85 m (410' x 279'). If this were implemented, the side stands seats would be further out than the minimum CFL requirement; this would work against creating a close-up atmosphere. Hence the reduced FIFA auxiliary area is used, which should still be acceptable for potential FIFA events.



Field of Play as FIFA Pitch

6.0 Bowl

6.3 Bowl Geometry

6.3.1 Plan

The traditional football stadium is based on a rectangular plan. Most examples including Mosaic Stadium follow this layout. However a circle actually places the majority of seats in the best location; on the sides close to the centre.

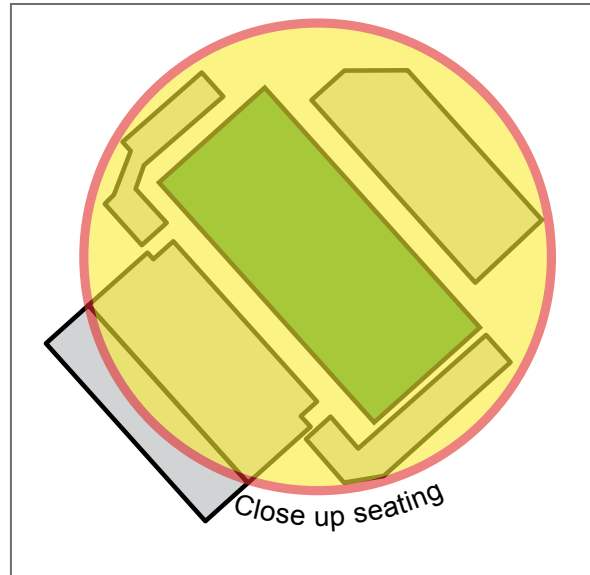
6.3.2 Arrangement

A pure circle generates a bowl with a saddle-type form, which we call the “infinity bowl” based on its infinity-sign profile in elevation. This can be modified to change emphasis. Two other variants were considered and rejected; a view bowl and a concert bowl.

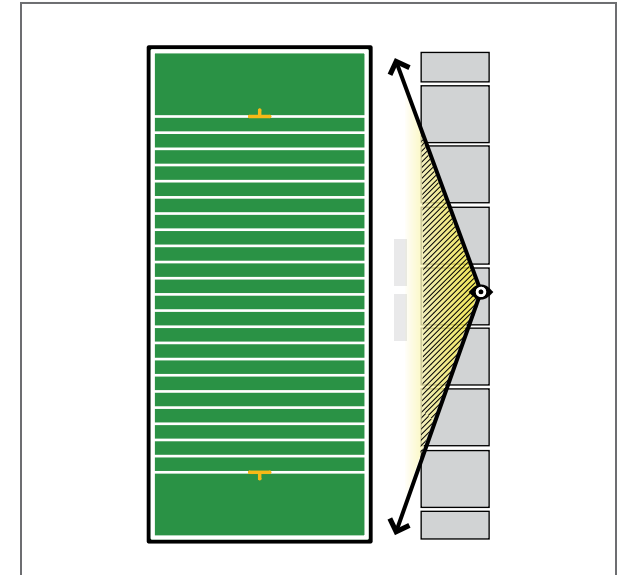
The infinity bowl was selected following review with the stakeholders.

6.3.3 Front Row

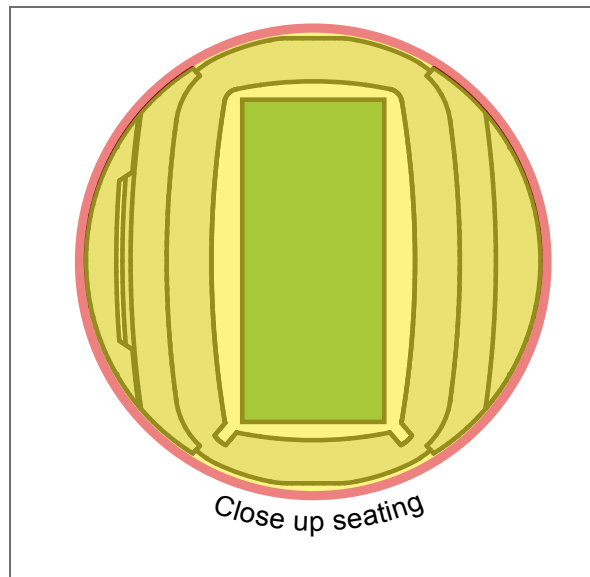
To improve sightlines the first row is elevated approximately 3' (1.2m) on the side stands and configured in an arc to create space around the bench and improve atmosphere through peripheral vision. The end zone seats are particularly problematic if too low. This is addressed by making these straight and cutting the front rows with an arc; this sophisticated and subtle geometry increases the height of the seats behind the goal further.



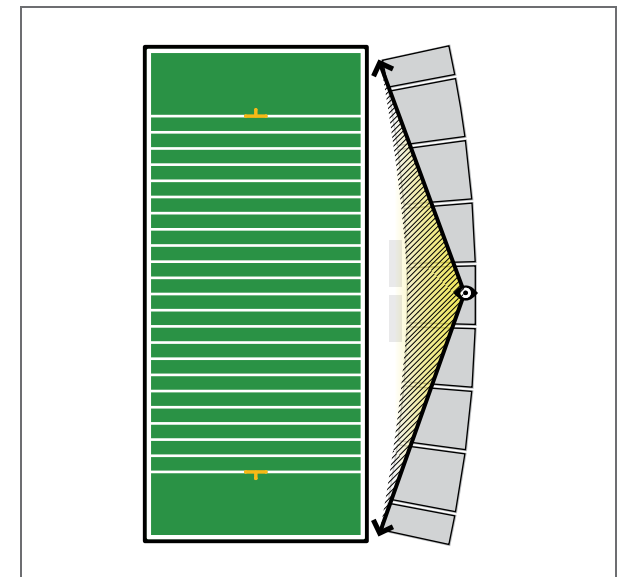
Existing Mosaic Stadium



Existing stadium: reduced view of the crowd

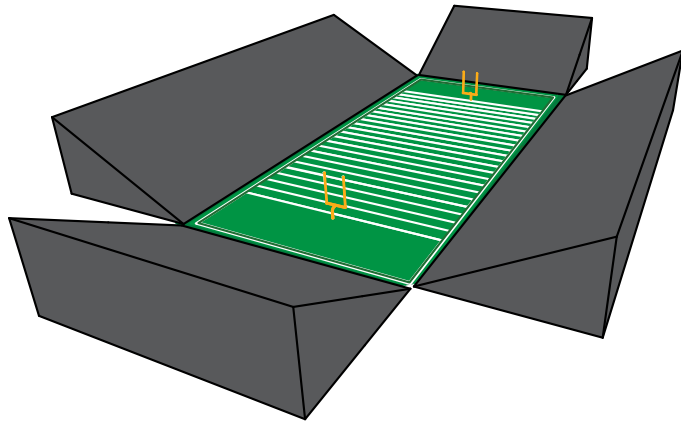


Proposed stadium geometry

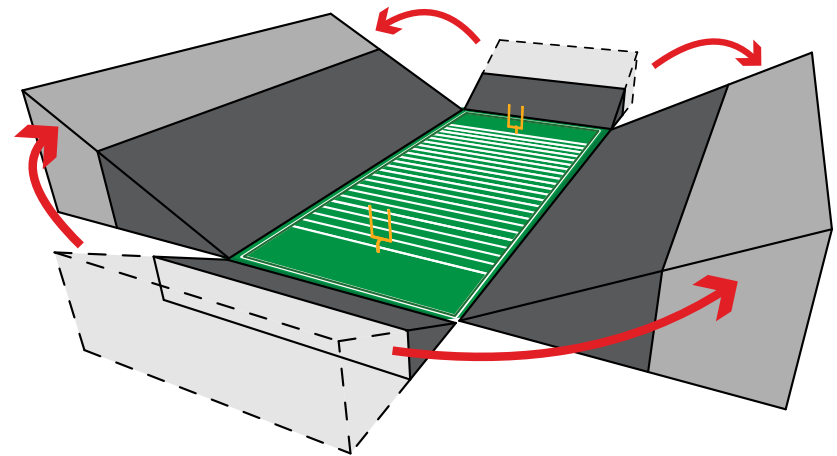


Proposed stadium: an enlarged view of the crowd

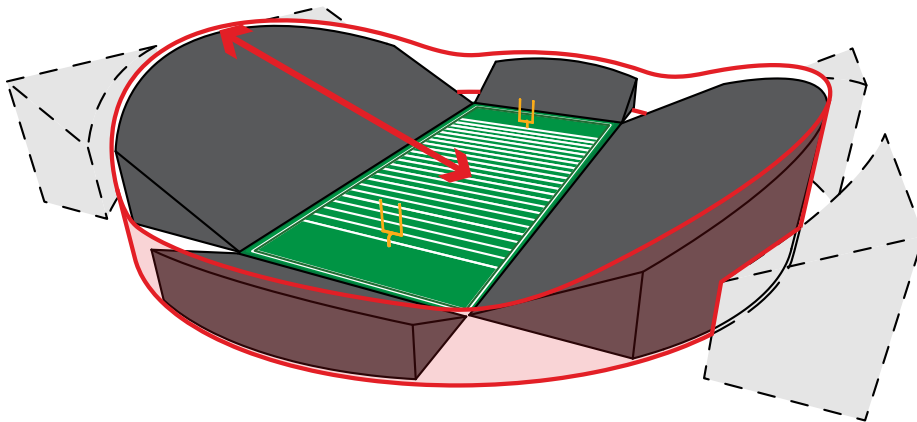
Development of the Bowl Geometry



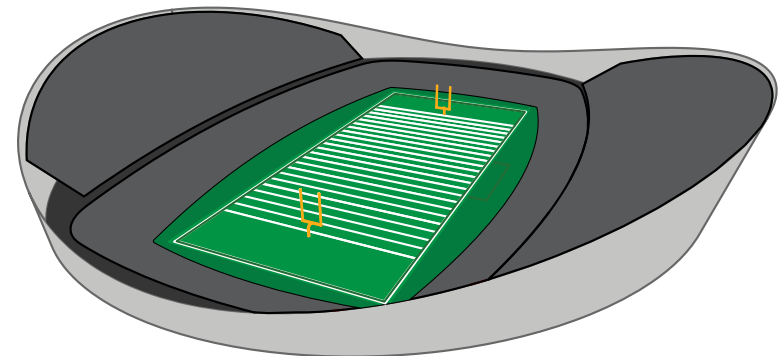
1. A traditional football stadium



2. Endzone seats are moved to the side lines



3. Seats with poorer views are brought closer into the corners



4. The infinity bowl design gives a good view to every seat

6.0 Bowl

Bowl Precedents



The Big House, Michigan, USA



Manchester City Stadium, UK

6.3 Geometry (cont'd)

6.3.4 Tier Configuration

Many tier profiles are possible and are fundamentally driven by the seat segmentation. For example an all GA bowl would be a single large tier, The Big House is a good example of this. The other extreme is a very high corporate content which requires a greater number of front rows and hence tiers, The Cowboys is perhaps the most exaggerated example.

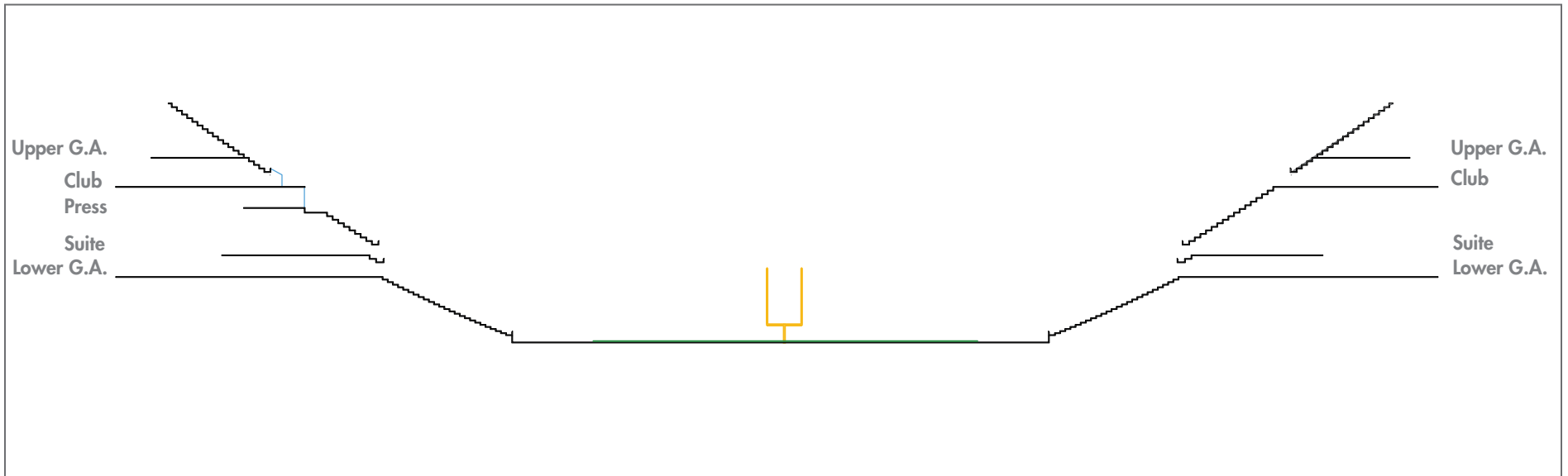
Following the precedents tour it was concluded that the suites should have moveable walls. This fundamentally effects the tier configuration. In the limited time available two options were considered:

- Option 1
Suites above lower tier, below club tier
- Option 2
Suites above club tier

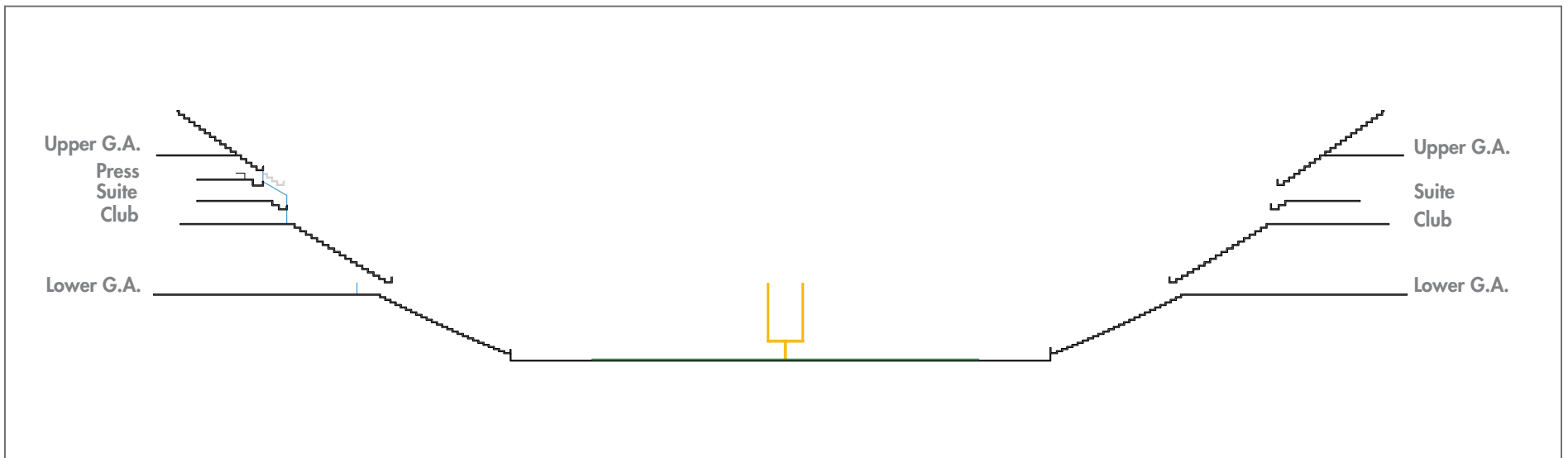
Both have advantages and disadvantages. The major point is that Option 1 places suites close, but arguably too close. The clear disadvantage is that the suites have no connection to the club lounges e.g. Lincoln Financial Field. The majority of patrons like to circulate in communal club areas en route and leaving suites so not having this feature could affect sales significantly.

This problem is addressed by Option 2 which places the suites above the club lounge level and connects the two with a double height space e.g. Target Field. The disadvantage here is the suites are a further away than would be ideal, although many examples have them further away e.g. Lambeau Field.

Option 2 is the ideal solution if the suites can be a little closer. The market study will clarify the metrics and the bowl / tier configuration can be finalised.



Option 1: Suites below Club



Option 2: Suites above Club

6.0 Bowl

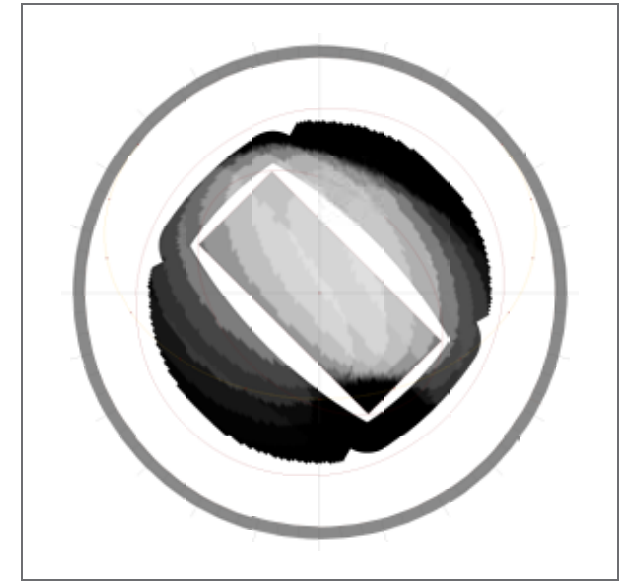
6.4 Field Orientation

At the outset a number of orientations were considered principally from a site planning perspective. The traditional orientation is north-south and this provides the most natural glare protection for players. As the scheme utilises the Confederation Park and seeks to improve the urban setting of Elphinstone Street, north-south is the best orientation from every point of view.

Solar Shading Analysis



Winter Solstice



Summer Solstice

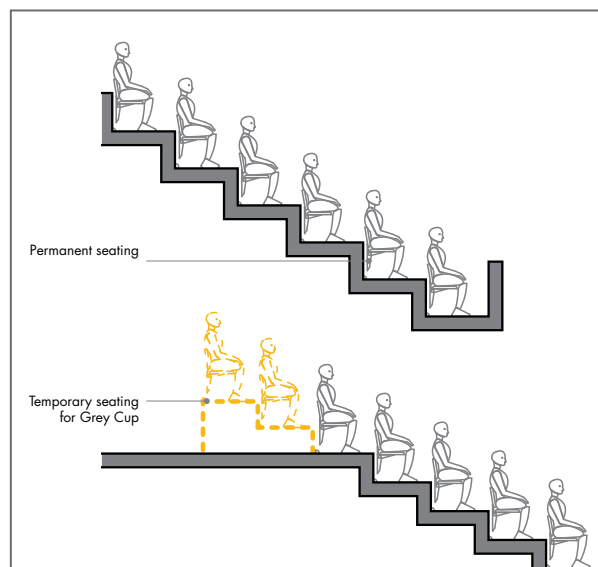
6.5 Field Access

Two tunnels provide access to the field. These are located in the corners at the south end, however there may be advantages to moving this and the associated accommodation to the north. This will be reviewed in the next stage.

Both tunnels will be for player and vehicle access. The home team tunnel will be associated with a potential tunnel lounge and side line suites and will only be used by vehicles for major events such as a capacity concert. Regular vehicle access shall be via the away tunnel.

6.6 Grey Cup Expansion

The infinity bowl is well suited for temporary seating in the end zone. For an increase to 42,000 an additional 9,000 seats or 27% are required. This is a significant number and would create huge ends stands and requires greater complexity in the spectator roof. To avoid this, as many seats as possible can be added to the back of the lower tier in the concourse. While this eliminates the open concourse for such events, it creates better (higher value) temporary seats and reduces the endzone requirement.



Expansion seats in concourses

6.7 Concerts

Major concerts are expected at the new stadium annually or bi-annually. Different acts have varying stage arrangements; end, side or centre. Specific concert overlay would be on an event basis.

General assumptions are:

- Spectators will be seated or standing on the field
- Additional toilets and concessions will be on an overlay basis both on the field and external concourse
- Ingress and egress to the bowl shall be via staircases created by removing seats
- Mobility-impaired users on the field will use the elevators that serve the field level hospitality areas
- Concert audio and lighting shall be an overlay provision
- Performers shall use locker rooms A1& 2 and B1& 2 (not Roughriders' home changing room) overlaid as required for green rooms

Proposed Grey Cup expansion capacities

6.0 Bowl

6.8 Seating

6.8.1 CFL recommended minimums

All spectators are to have individual seats as follows:

- Minimum tread depth:
33" (840mm)
- Recommended Club tread depth:
33" - 36" (840 - 915mm)
- Minimum G.A. seat width:
19" (480mm)
- Recommended Club seat width:
534 - 560mm (21" - 22")

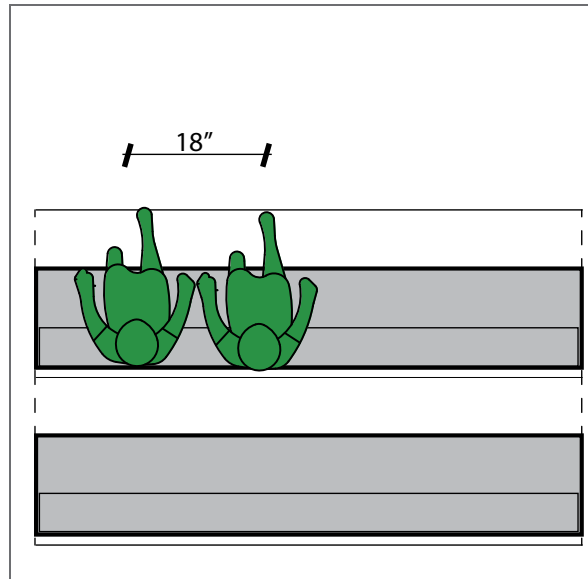
6.8.2 Current Proposal

The long benches of the current Mosaic Stadium are uncomfortable and cramped. There are no benches in the new stadium; all seats will be individual with comfort room between them, possibly with arm rests and cup holders.

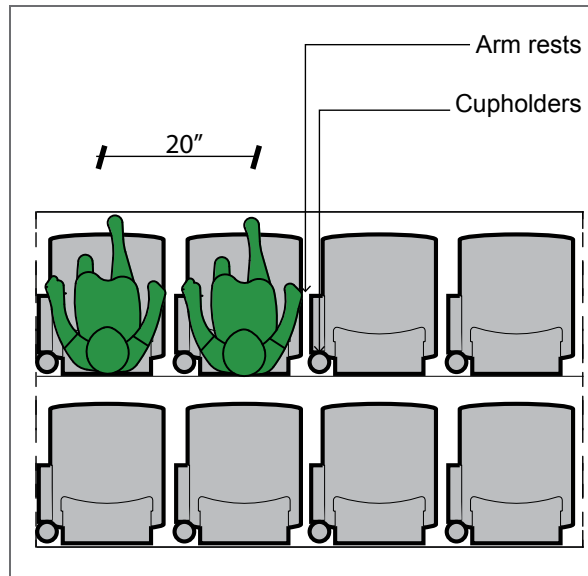
The current proposal provides for three classes of seating:

- Lower Tier G.A.:
20" (510mm) seats on an 33" (840mm) tread
- Club:
22" (560mm) seats on a 36" (915mm) tread
- Suites:
24" (610mm) seats on a 42" (1065mm) tread
- Upper Tier G.A.:
20" (510mm) seats on a 33" (840mm) tread

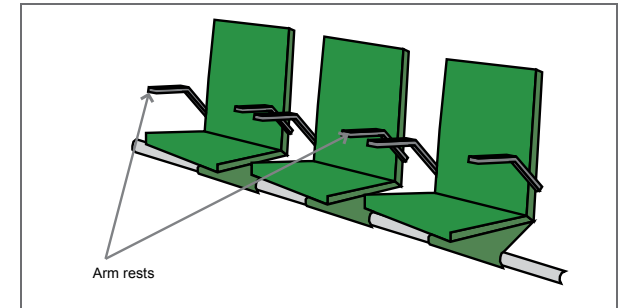
These dimensions are based on precedents seen on the August stadium tour.



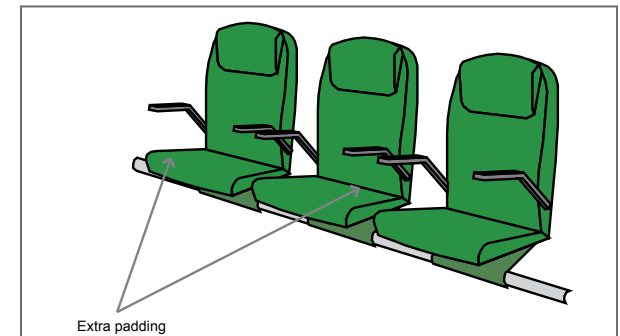
Existing stadium: hard bench seating



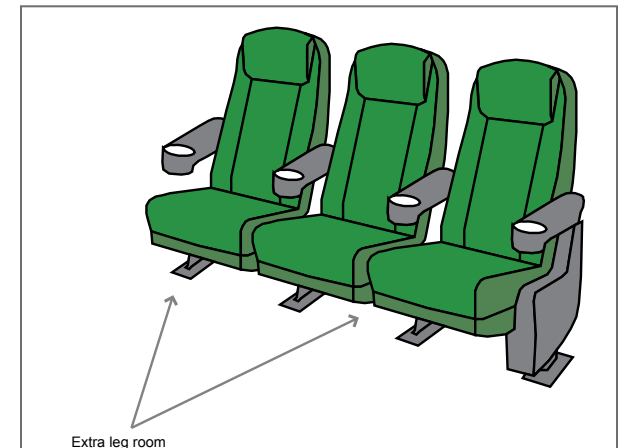
Proposed stadium: individual seats



General admission (G.A.) seating: basic but comfortable



Club seating: a higher-end, more comfortable seat



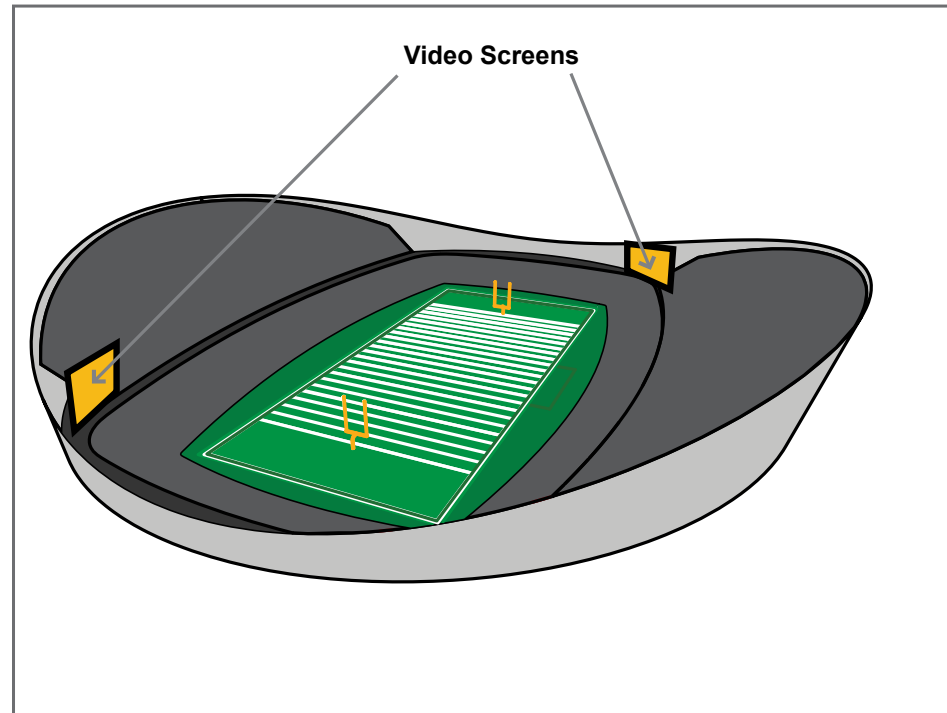
Suite seating: deluxe seating with the most room

6.9 Advertising & Replay

Video content and digital advertising is part of live sport today. It will be displayed on several devices:

- Large Format Video Boards
- Perimeter Advertising Boards
- Local TV screens in concourses, lounges and suites
- Local feed to hand held devices
- Ribbon boards

For the concept design, the principle issue is video board location. There are three basic options: suspended central orb, central behind end stands and in corners. The corner is better from a viewing perspective as it is better aligned to the majority of the seats. As there is also a requirement for Grey Cup expansion this solution is even more favourable. Therefore corner screen locations in north-west and south-east are illustrated.



Proposed video board locations

7.0 Hospitality

7.0 Hospitality

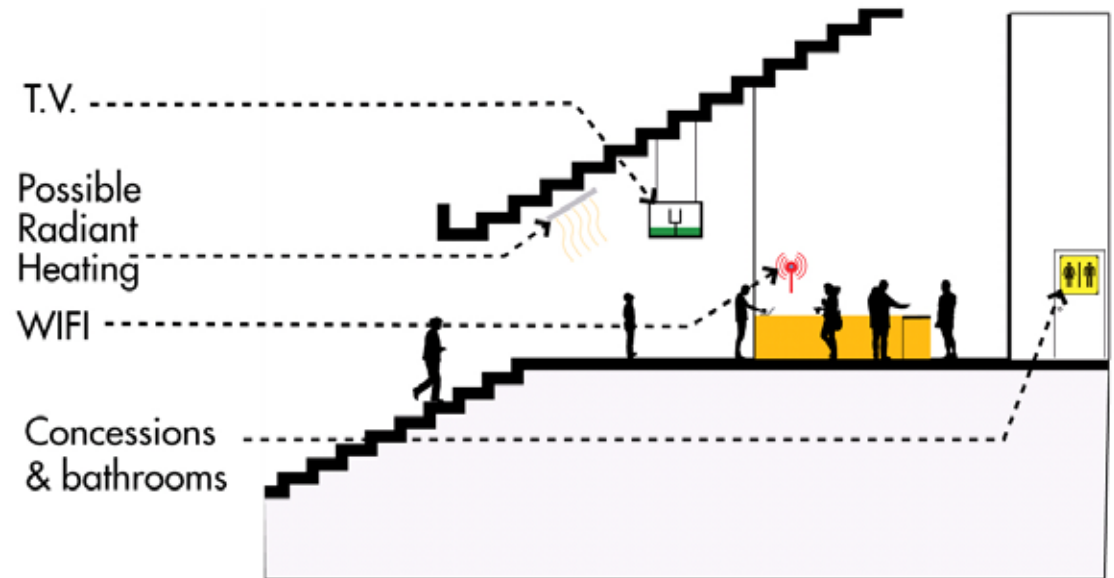
7.1 General

To enable a concept to be developed a working model for the hospitality content has been used. This has evolved from the first assumptions in June and most recently revised following the precedents tour in August. The Roughriders appointed a market test consultant to finalise the hospitality content. This should address all spectators and be coordinated with the catering consultant to define the correct level and stratification of offer for GA, Club and Suite holders.

7.2 GA Spectators

Concessions provided at approximately 23 ft counter length/thousand. This is an issue for catering, however the type of offer (e.g. generic or branded outlets) does affect this and should also be addressed in the market test.

On the main GA level there is accommodation for a lounge; how this is ticketed with respect to the GA spectators is important and again needs to be addressed as a result of the market study.



Spectator facilities in concourses



Open concourses at Target Field, Minneapolis



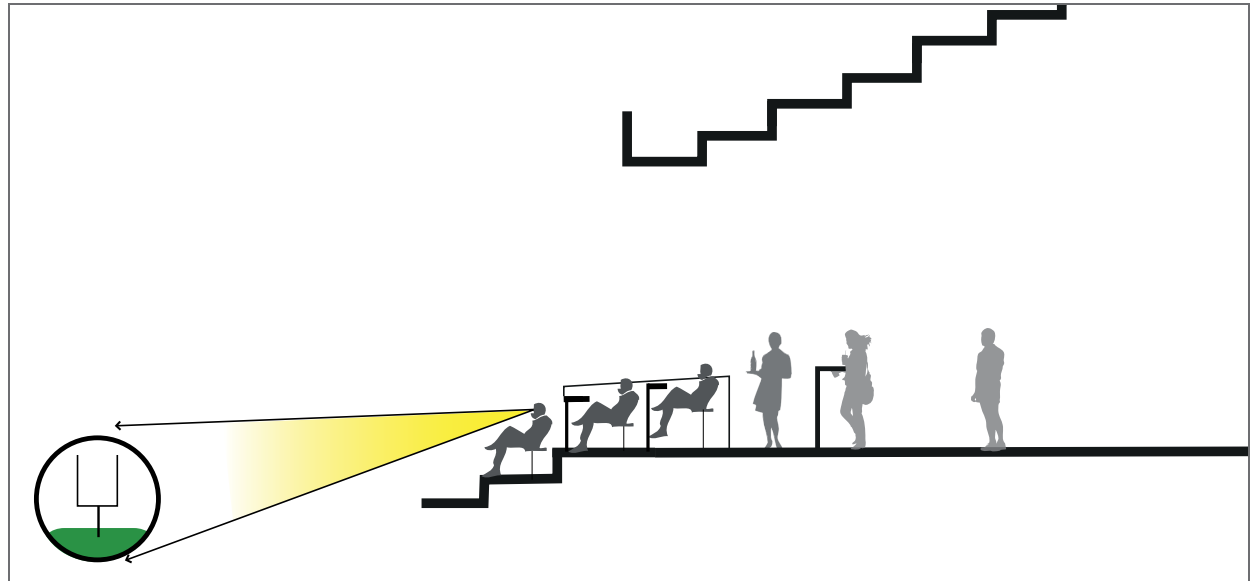
Field-view lounge at Target Field, Minneapolis

7.0 Hospitality

7.3 Club

There are lounge, loge and concourse based club seats envisioned for the new stadium. Loge type seats are external seats in groups of 4-6 off the concourse at the back of the tier. The Hospitality Market report has helped to identify the appropriate number for the Saskatchewan market.

Club seats on one side of the stadium will be serviced by an internal concourse (conditioned) and will require a premium concourse offer. A small proportion of these seats are internal.



Loge boxes with waiter / waitress service off club concourse



Loge Boxes at TCF Bank Stadium, University of Minnesota, Minneapolis



Club lounge at Lambeau Field, Green Bay

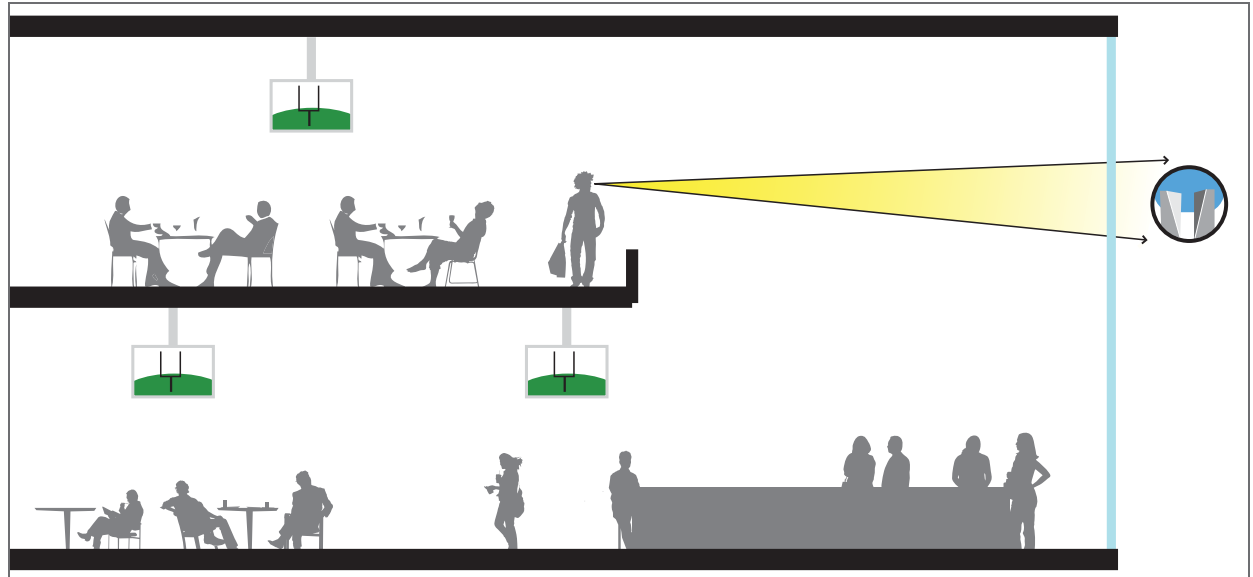
7.0 Hospitality

7.4 Lounges and Suites

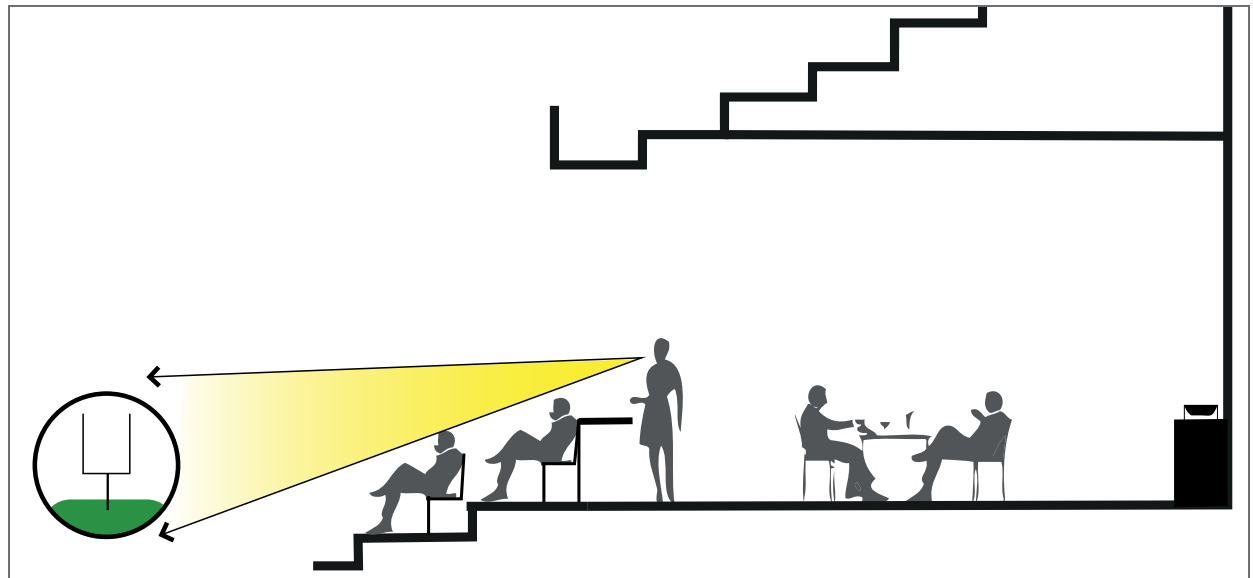
A mix of lounges, suites and loges have come out of the Hospitality Market study work. The study has provided input into their:

- size
- level of offer (catering)
- ambiance
- location
- view quality

This should address game and non-game use. The layout, finish and service of these lounges needs to address the required uses e.g. conference, weddings, parties, trade fares, ongoing Evraz Place events etc.



Lounges with bars, various types of seating, and views of the city



Suites with interior/exterior seating, private catering and a variety of furniture



Busy lounge at Lincoln Financial Field, Philadelphia



Suites at Lincoln Financial Field, Philadelphia

7.0 Hospitality

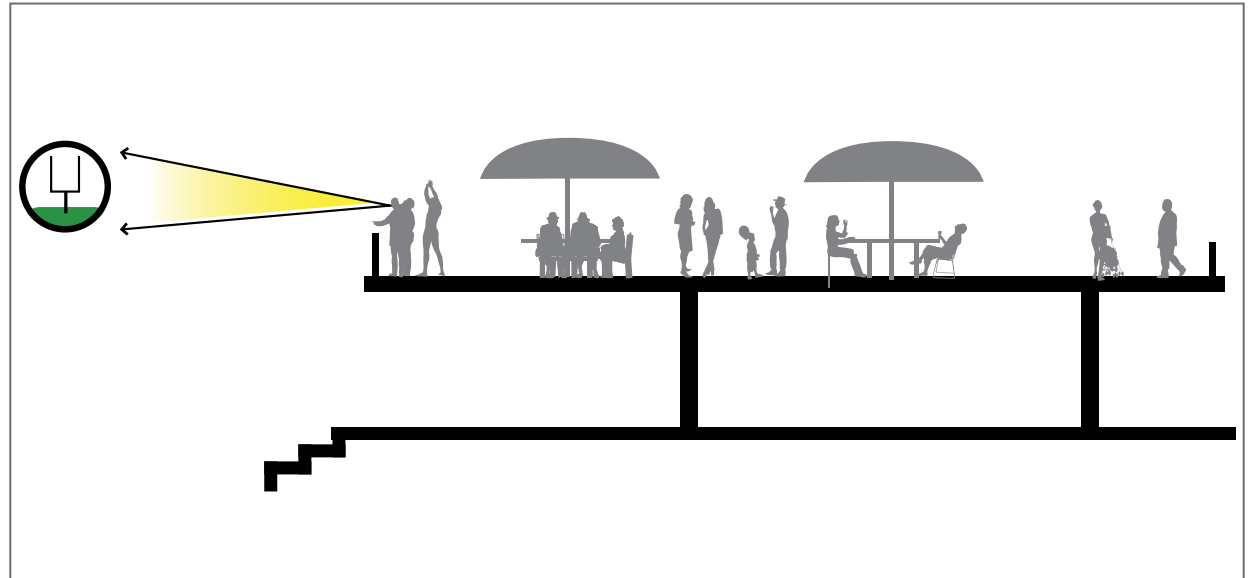
7.5 Standing Hospitality

Informal standing tickets are increasingly popular. There are three types:

1. Party Decks
2. View Towers
3. Concourse Lean Rail

All these are assumed to be tickets without a seat, but this can be changed as required by the ticketing policy. The concourse positions shall be numbered via floor decals to avoid bottle necks and over crowding of concourses. The deck and towers will have a maximum capacity and should adapt to market need. However an initial market assessment is required for location, type of offer, ambience etc.

The current assumption is that the party deck is at the north end, but it could be at the south or both. The design permits adding a southern deck. The deck is illustrated as one large 1,000 person deck. In practice this would be a series of connected spaces, possibly with varying levels.



Outdoor party decks; ideal for sponsorship opportunities



Party deck areas at Target Field, Minneapolis



Budweiser tower at Target Field, Minneapolis

8.0 General Arrangement

8.0 General Arrangement

8.1 Planning Strategy

Fans in Regina have developed a culture of meeting before, during and after games. It was felt by the stakeholders that this needed to be retained in the new stadium design. As such, the stadium is configured for all spectators to be able to meet in the Main Concourse; however it is important to note that this assumes a neutral flow i.e. all 33,000 spectators cannot fit on this level.

To accommodate this gathering culture all concourses, but principally the Main Concourse, are planned to create large spaces at the entry points which narrow to circumvent the bowl. This practice is also seen as important for lounge and club seating; all users can enter at Club Level into the lounge to meet friends and colleagues; suite holders then go up to suites. The levels could be segregated if required.

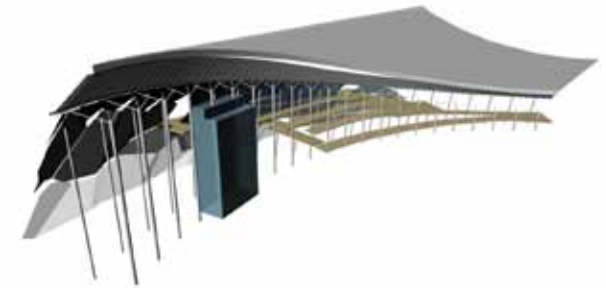
Historically most stadia are a collection of stands and Mosaic Stadium is a prime example. The new stadium is a hybrid bowl-stand stadium. The lower tier is a stadium in the round (bowl) with seats and access through 360°; this allows for flexible entry and an intense communal atmosphere. The elevated tiers are a series of stands; principally east and west with the party deck on the north. These stands operate independently and spectators here need to return to Main Concourse to meet.

Spectator and player/official segregation is achieved through vertical separation. Players, coaches, officials and servicing are via basement accommodation. The media and coaching suites are on a discreet floor and administration offices also have their own floor.

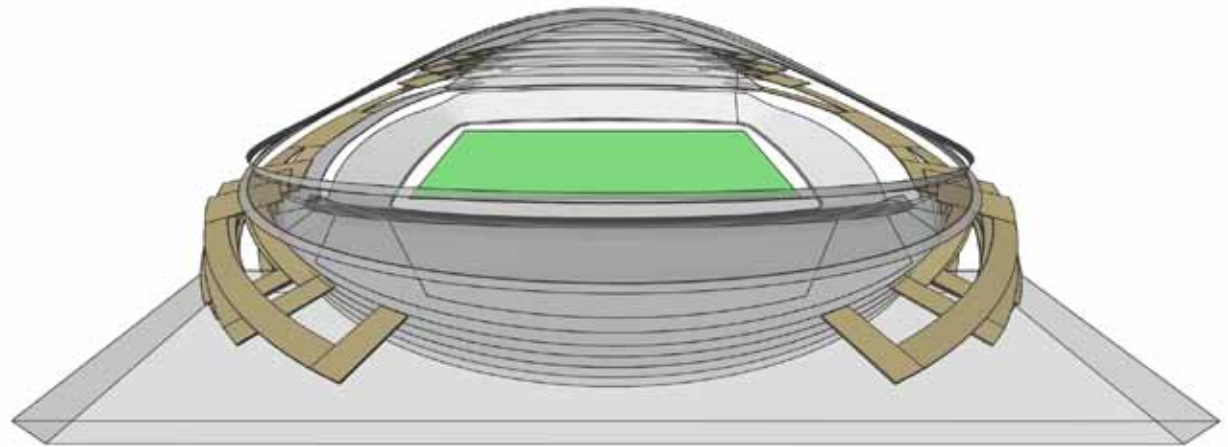
8.2 Circulation

Ramps serve all levels and begin at ground level inside the Main Concourse to facilitate the gathering discussed above. If entry by level is required at a later stage, gates and railings could make the entry segregated. The organisation of the ramps seeks to make the most of the procession of fans, interaction and views while ascending and descending.

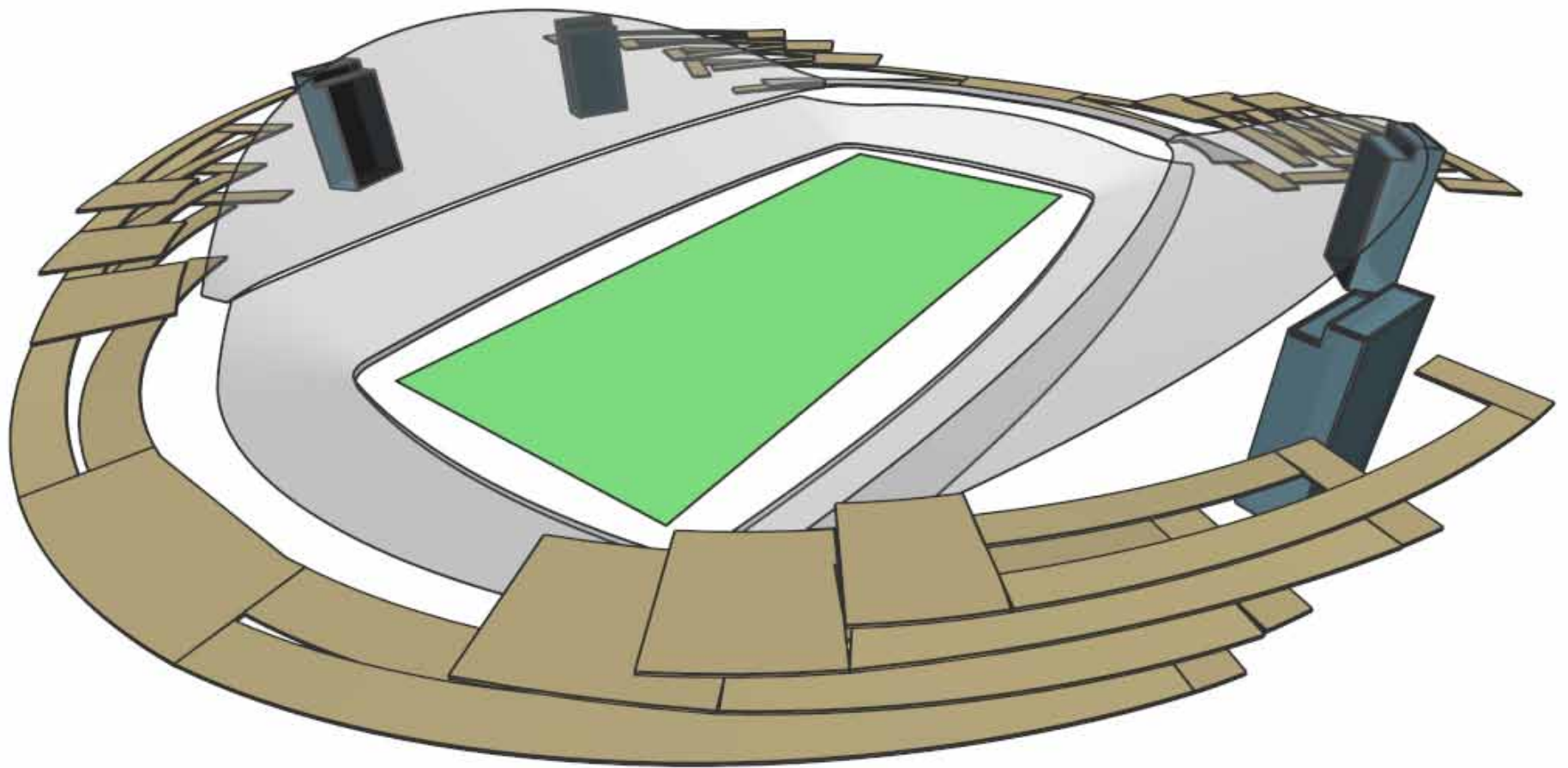
Suite and club users also have lift and escalator access via dedicated lobbies in the west stand. The east also has these lobbies but only provision for escalators.



Ramps and lift with the envelope



Vertical circulation diagram; West view



Vertical circulation diagram; South-east view

8.0 General Arrangement

8.3 Floor Levels

Basement

Arranged over two levels this is a non-public support area. The lowest level comprises; player changing, operations, groundsman's store, building plant and loading dock. The upper basement level is additional operations and building plant.

Main Concourse

This is ground level and the main spectator level of the stadium. It is configured to connect to pre/post game spaces on east and west. The west space is Confederation Park which links to the stadium concourse via a new colonnade. On the east, a large scale canopy creates a sheltered zone off the plaza, in front of the main entrances and store. This will improve utilisation of this part of the stadium though-out the year for game and non-game days.

Facilities on the Main Concourse could also support other events at Evraz Place on non-game days.

Mezzanine and Deck

The large main concourse storey height is required for the scale of the space. This creates an opportunity for a mezzanine within the main west lounge at this level. The party deck is also at this level.

Administration Level

To maintain a good storey height in the main concourse below, the administration level in the east stand is set above the west mezzanine. This is essentially an office shell served by two cores and local plant. It would be divided to suit the needs of the Riders and amateur sport associations under the Sask Sport umbrella. The two cores also allow individual entrances for the two organisations.

The main kitchen may also be located on the west side at this level.

Club Level

Serving the middle club tiers are the east and west club concourses. They are positioned at the back of the tier to open the concourses to the bowl. The two sides are separate with no connection.

The west stand is an internal, conditioned space comprising the central lounge (best in the stadium) with field and park views. Flanking the lounge are two internal concourses arranged as large rooms with field views and a limited aspect to the park. A small number of the seats will be behind the glazing for those who prefer an internal experience.

Seating on the east club tier mirrors the west but is served by an open air concourse. It has field views and a linear arrangement. Initially the centre of the concourse will be a large volume; this is not required for the concourse but provides floor plate for a future lounge. Until this is implemented, the area can be utilised as a terrace with outdoor furniture, mobile stalls and bars. It has dramatic views over the city and the field.

Suite Level

A dedicated level of suites spatially connected to the club level by a central void. Each stand also has a Sponsor deck separated from the boxes by a terrace. Food service is via satellite kitchens.

Accredited Suite Level

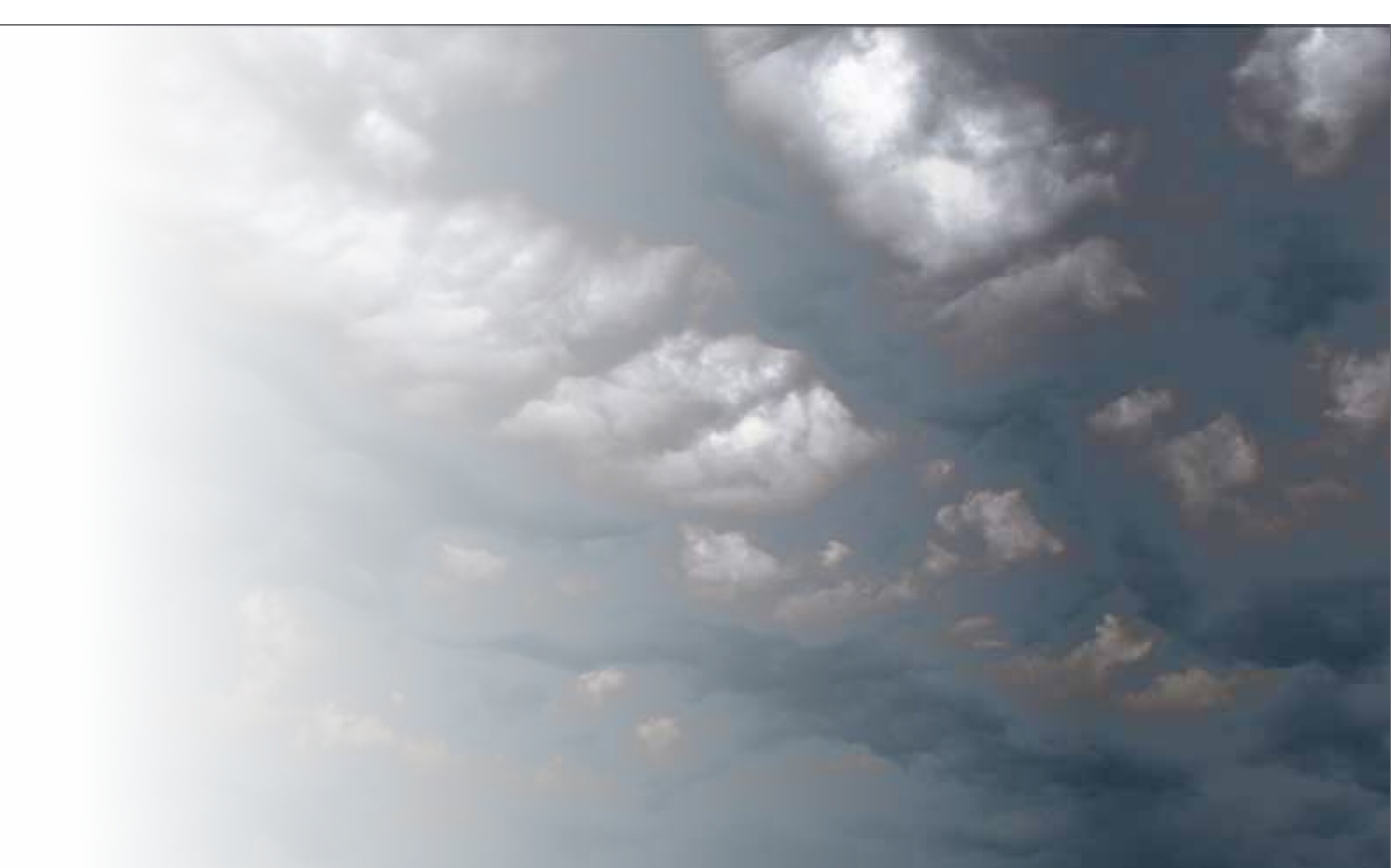
In line with current North American practice, media and coaching suites are provided centrally. This is a high end offer and could be reduced. Other alternatives for the media will be reviewed in the next stage.

Upper Concourse

Serving both upper tiers are the upper concourses. These are closed concourses with vomitory access. Whilst an open concourse could be implemented here, the tier would be further elevated and lateral access stairs would be required. At this elevation the city views offered are also dramatic and will give each a unique character; city and park.

Plant Level

Providing shelter to the upper concourses are the plant decks. These are open to air and will accommodate a large mechanical plant that requires an external environment like chillers and air handling units to serve the conditioned spaces below.



9.0 Envelope

9.0 Envelope

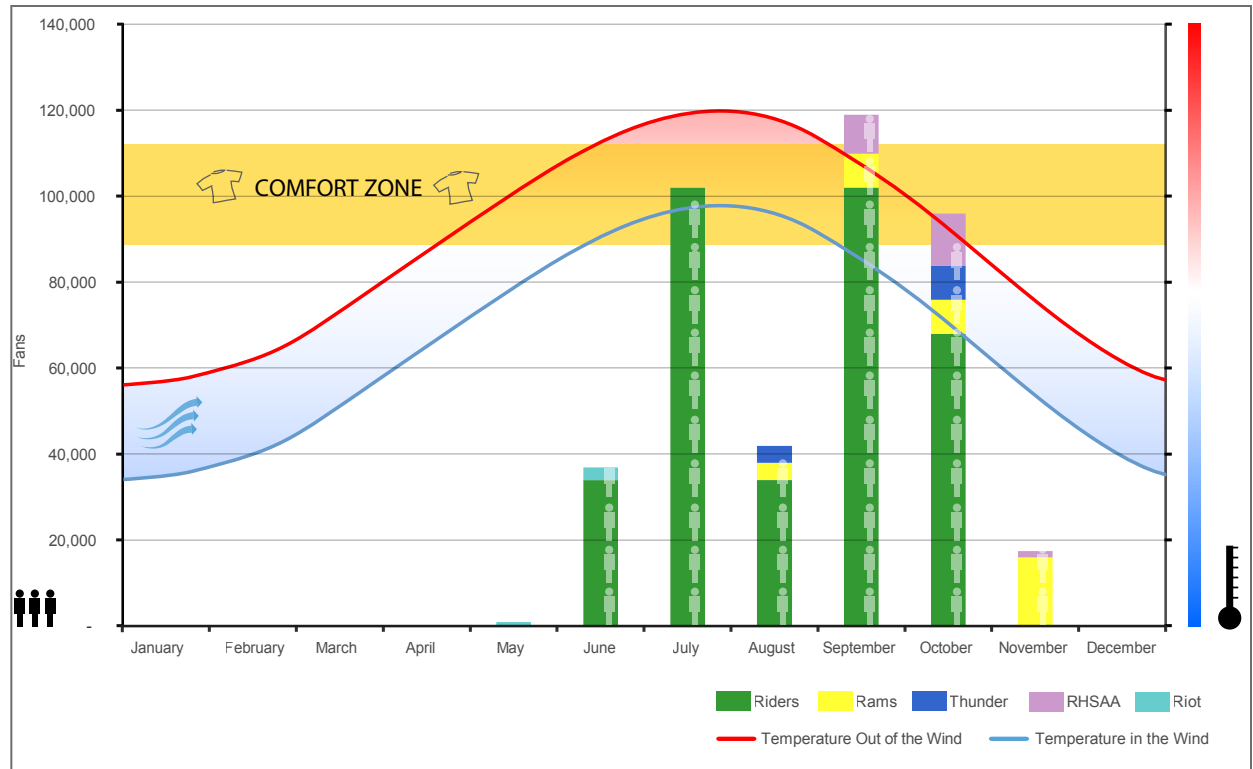
9.1 Performance Aims & Environmental Design

Regina has extremes of climate. The use of the stadium in winter has generated considerable debate on the need for roof provision. To provide protection from the elements, the whole envelope, façade and roof, must be considered together.

It is clear from all stakeholders that the ideal balance is a protected environment for spectators and an outdoor environment for the field. This is unusual as a performance aim in Canada. In the public imagination a stadium is either indoor or open to air with nothing in between. Partial roofs are viewed more as iconic symbols rather than as a part of the building with practical purpose.

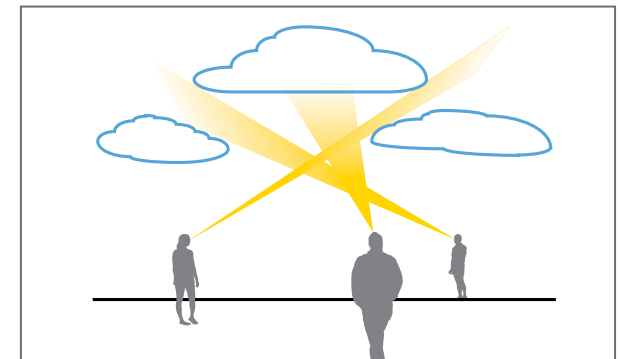
In this context an analysis of the current stadium utilisation and climate is informative. As the graph illustrates, most use is in the period of June to October. The dry bulb temperature peaks in July and is at its lowest in January. Overlaying the wind, we see a perceived temperature reduction of approximately 10° due to the wind chill effect. In summer this is beneficial, in winter it is not. Removing the wind in winter makes November feel more like October or conversely extends the season by a month. Allowing sunlight onto spectators improves their comfort and artificial devices, like radiant heaters, raise comfort levels further. In summer, the environment of an open air stadium is ideal for evening games. During day games the environment can be unpleasantly hot.

Superficially, these ideas appear to be contradictory. However a roof and envelop that provides shade and air movement in summer; and solar incidence and still air in winter is not necessarily mutually exclusive.



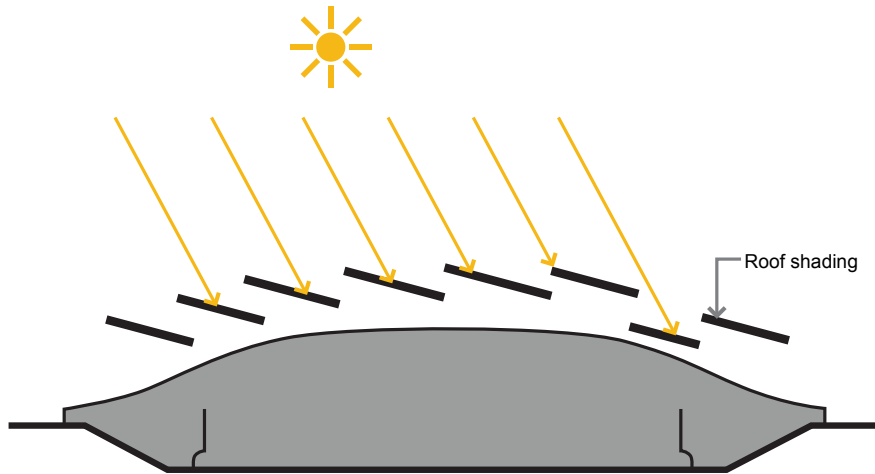
Windchill and temperature during event season

The performance aim is to shade and promote air movement in summer and encourage sunlight and minimise air movement in winter. Although this appears to be an obvious response to the climate conditions, we believe this will be the first venue in North America to combine these approaches in a spectator roof.

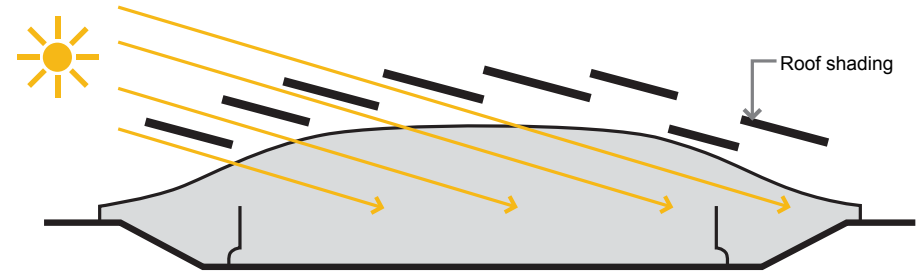


Cloud parallax: the difference in the apparent position of an object viewed along different sightlines

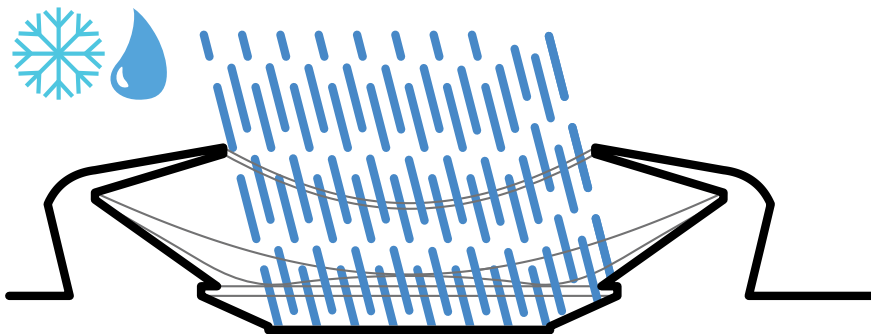
Performance Objectives



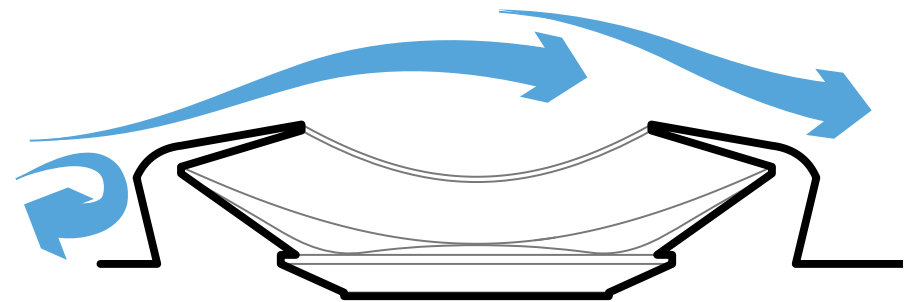
Summer sun blocked from the seating bowl



Winter sun let into the seating bowl



Provide spectator protection from the elements



Control the wind and its effect on the bowl

9.0 Envelope

9.2 Wind Mitigation

Regina has a very directional wind on a prevailing axis of Northwest/Southeast. This predictability enables a form to be generated that mitigates the wind effects in the stadium.

Designing a stadium envelope (with an aperture) that creates still air inside is complex and specialist. There are two main methods; wind tunnel testing and computational fluid dynamics (CFD). In concept stage CFD is the common tool as wind tunnel testing is expensive. For this stage we built simple CFD models to understand the main drivers affecting the wind performance of the design. In subsequent stages, more complex models would be used and, ultimately, a wind tunnel test to prove the final design prior to construction.

From the initial studies, the principle variables affecting performance are:

- Orientation
- Aperture size
- Roof Profile (shape)

We found that all options tested significantly reduce wind velocities inside the stadium proving the spectator roof concept is valid. The performance is further improved by orientation and aperture size. Profile has some impact and the preferred shape is the one illustrated, a flat top version was also tested.

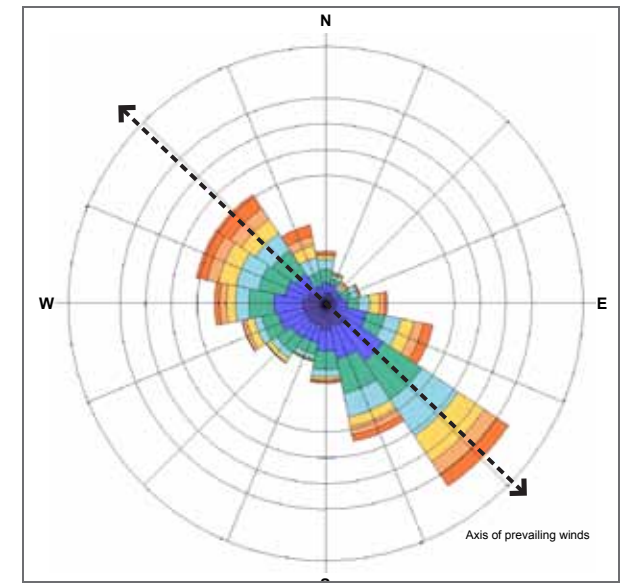
There is a benefit in orienting the stadium in a northeast/southwest axis as this presents the highest mass perpendicular to the wind axis. This gain needs to be balanced with the clear planning benefits of a north-south orientation i.e. ideal connection to Confederation Park and Elphinstone Street, symmetrical people flow and external concourse

space created in highest crowd density zones. Other orientations would compromise this and the gain in wind performance does not warrant this.

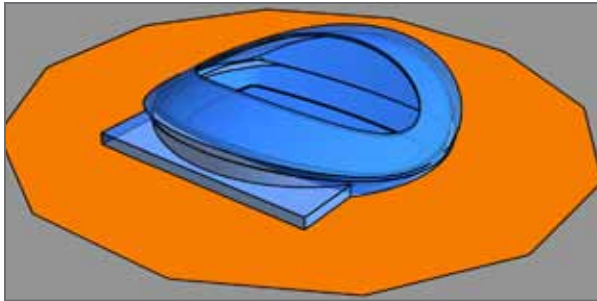
Aperture size is also a major factor and reducing aperture has significant benefit. Unfortunately, the additional roof area would exceed the target roof budget.

These findings tell us a spectator roof can control wind and the proposed roof has significant performance benefits. In the next stage this will be developed further to optimise the performance with the planning constraints and available budget.

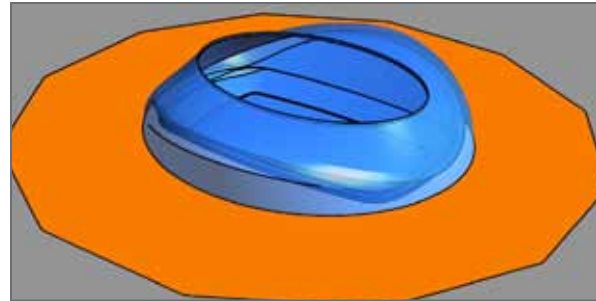
Wind is beneficial for the summer games and even in winter, a degree of wind penetration in key locations will actually help reduce wind speeds by modifying the wind profile around the aperture. This control is achieved by a band around the back edge of the roof. This is illustrated as a series of vertical louvres. Further development may alter the orientation but the basic principal is proven on projects like the Etihad stadium.



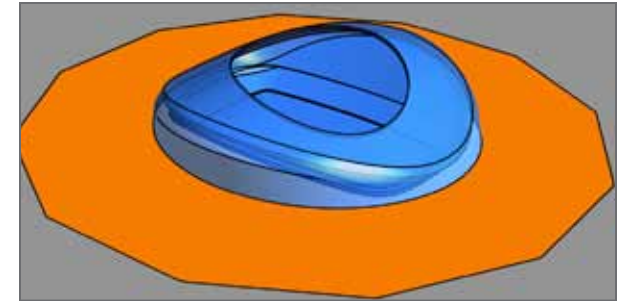
Primary axis of prevailing winds



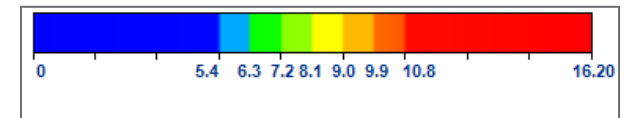
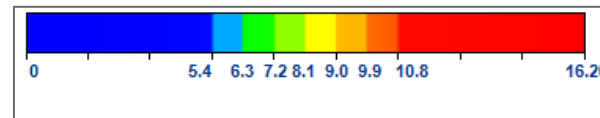
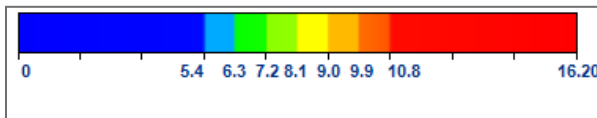
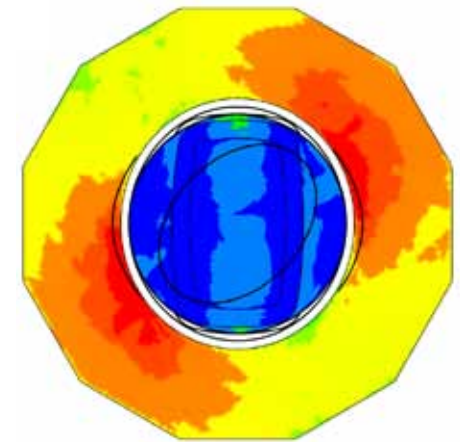
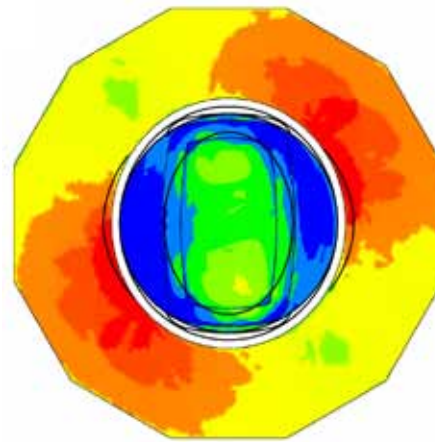
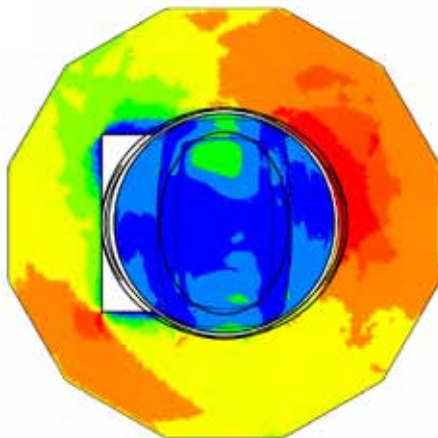
North-south dripline



Flat-top dripline



Rotated dripline

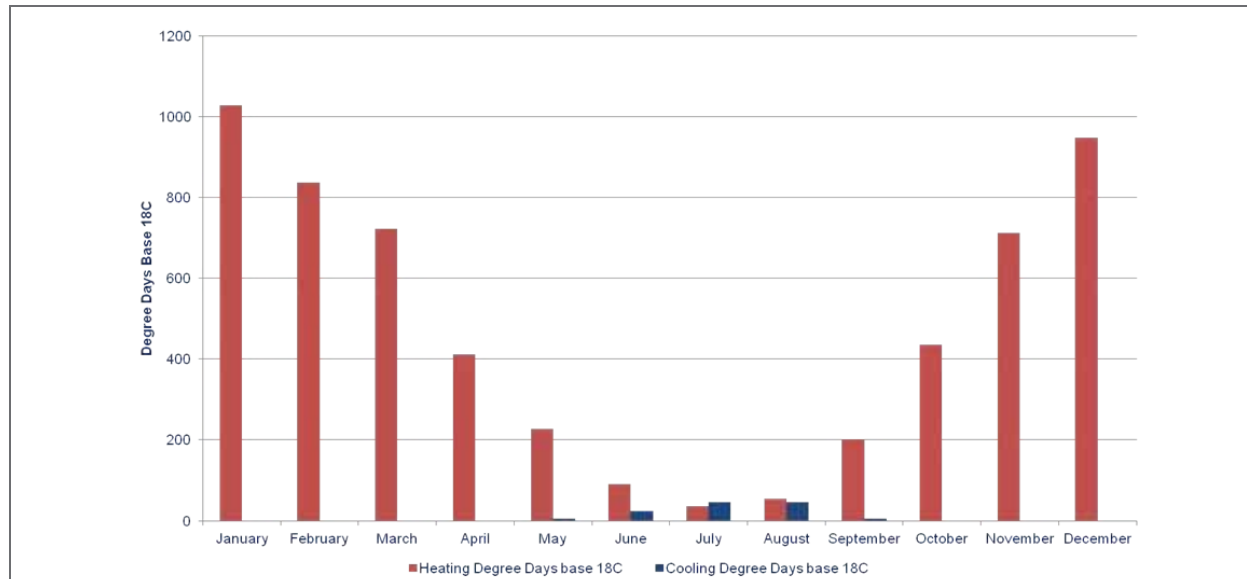


Initial CFD wind analysis results; blue and green reflect significantly decreased windspeed

9.0 Envelope

9.3 Heating Design Days

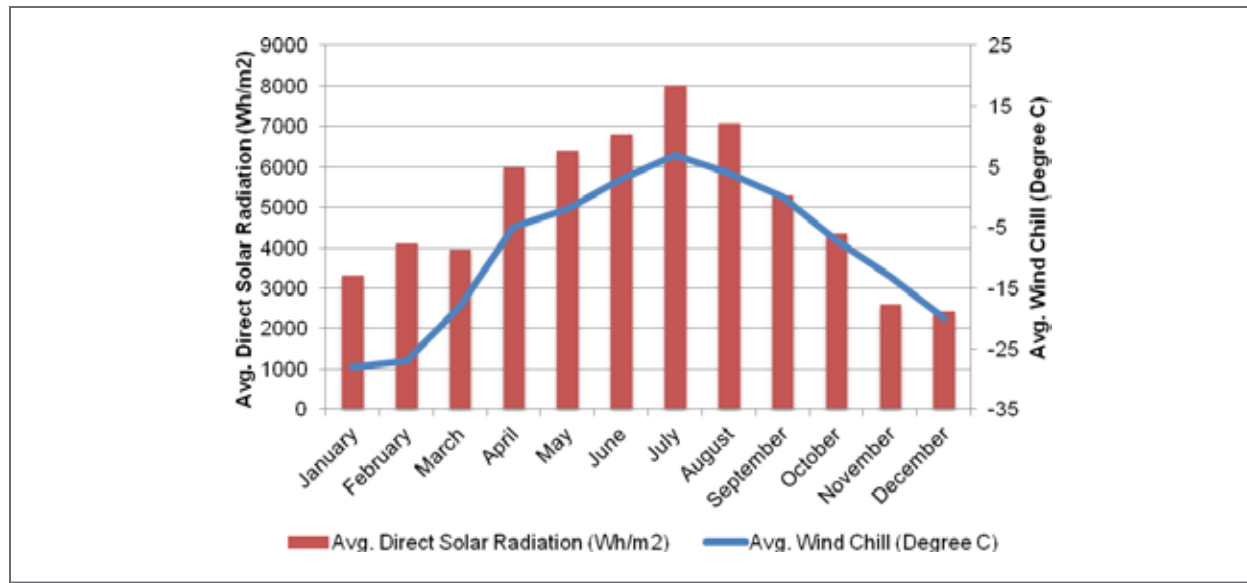
The graph shows the heating degree days for Regina. A heating degree day is a measure of energy required to heat a building, taken from a base point of 18°C (i.e. above 18°C cooling is required, below 18°C heating is required). It is apparent that very little cooling is required overall. In the event that a fully enclosed roof was provided, it should be possible to deal with the July and August months using natural or mechanical ventilation only (i.e. improve comfort by blocking the radiant heat from the sun, and creating air movement either mechanically or naturally). However, heating clearly has benefits outside of the 3 month summer period.



Heating degree days

9.4 Solar Incidence

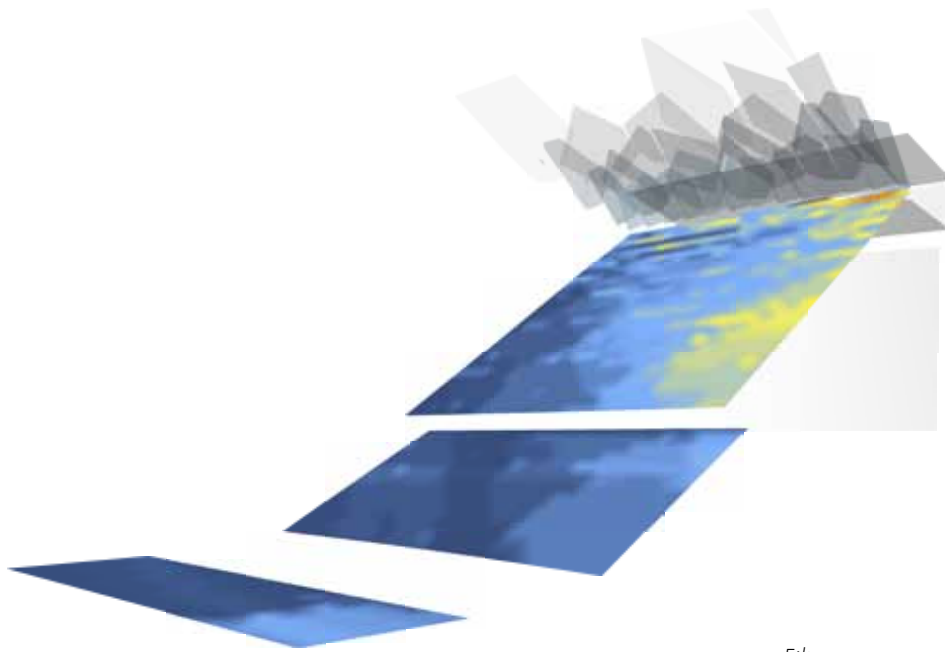
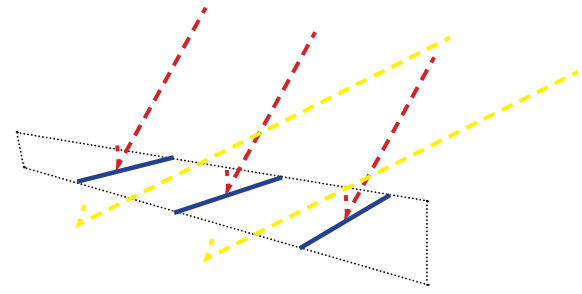
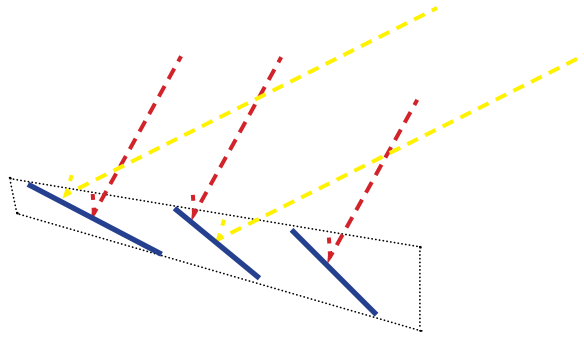
The graph indicates the amount of sun Regina receives in a year. Consideration should be given to harnessing the high incidence of solar radiation outside of the April to September period in order to further offset the wind chill, and to mitigating the effect of the highest peaks between May and August.



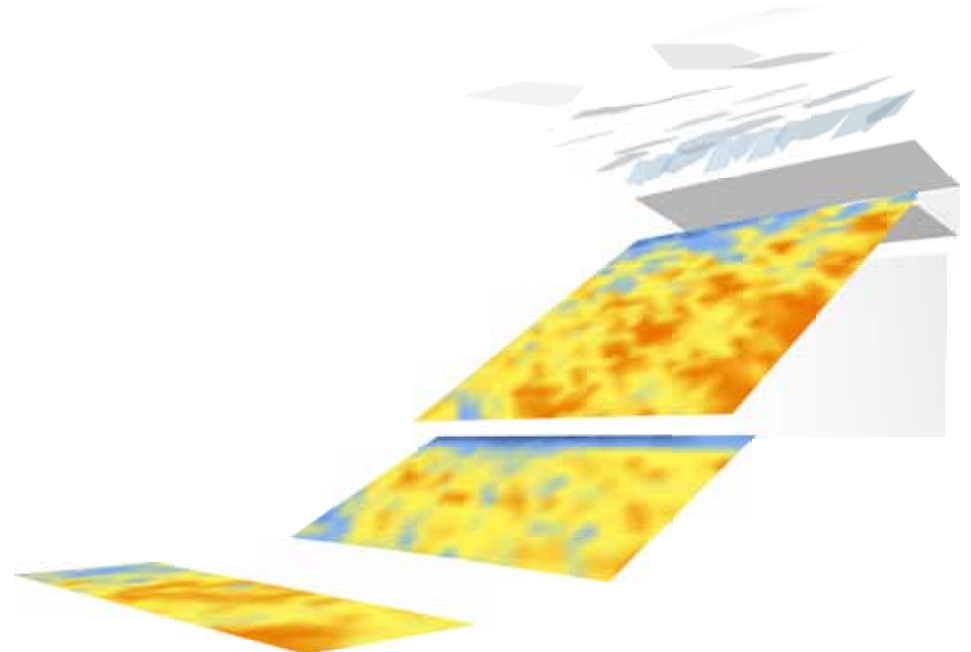
Annual solar radiation

Solar Radiation Strategy

- Winter sun
- Summer sun



Filter summer sun



Permit winter sun

9.0 Envelope

9.5 Roof Ready

A number of options were considered for enabling schemes (Roof Ready) allowing various upgrades to the roof over time. The simplest of these is an open stadium with a bowl structure capable of accepting a roof at a future date. As the base case is now a Spectator Roof, only two roof ready options are possible; filling in the aperture to create a permanent indoor venue or installing an operable roof allowing either indoor or open use. As this flexibility is required, the roof ready proposal is for an operable roof.

There are a number of factors to consider in designing the stadium to accept an operable roof in the future, including:

- Foundation implications
- Geometry
- Original roof structure
- Fire strategy
- Internal environment

As detailed in this report, the summer climate can be addressed without the need for cooling. The internal environment can be managed by the air infiltration louvers. Hence no provision needs to be made for additional plant in the event a roof is added.

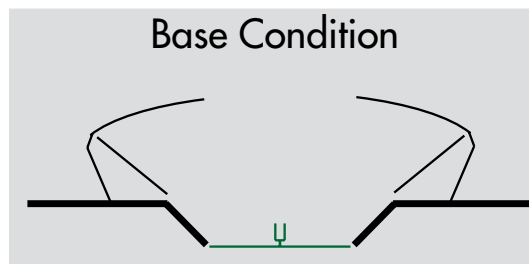
The three most critical issues are foundations, geometry and base roof structure. There are many options here but the broad range is; maximum initial works or minimal initial works, i.e. implement as many elements as in the base scheme leaving less to add in the future or; do as little as possible initially and leave it for the future. The former option is attractive if the eventual upgrade is a certainty as the overall cost is less, i.e. high initial cost with lower conversion cost. The latter is better if the eventual upgrade is only a possibility or initial funds are capped and insufficient, i.e. lower initial cost and higher conversion cost, which is the case with the current funding arrangement for the stadium project.

Given the innovative approach and encouraging wind performance results of the Spectator Roof, it is quite possible that the fans will find this the best blend of open air and protected. Fortunately, the geometry of the proposal is well suited to receiving a future operable roof without increasing the initial cost. The provision here is spatial and the proposed base design has the following benefits in regard to this:

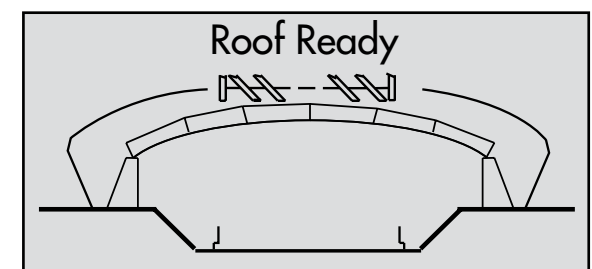
- Sunken bowl and minimal end stands
- High roof line

These factors allow an independent operable roof to be added in the future. This would comprise a pair of arches spanning the length of the field outboard of the side lines. They would be mounted on vertical supports landing at Main Concourse on the outer perimeter of the end stands. The large volume here allows for future construction access for foundations.

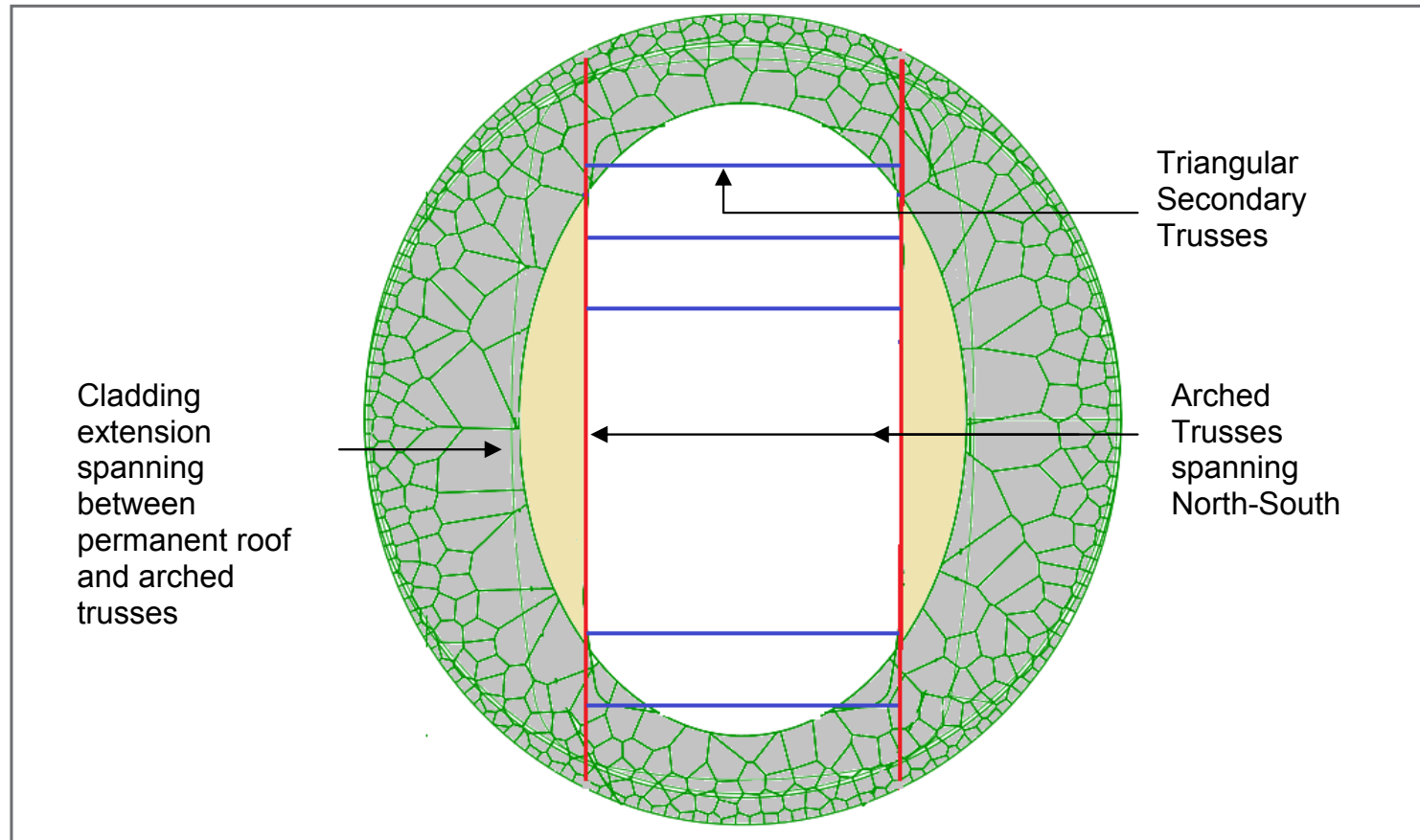
The arches would fit under the current roof plane and carry the moving roof panels. A number of options are possible for the moving panel including; independent moving and rotating panels, concertina fabric or fixed large panel. The design of these will be reviewed in the next stage together with the disruption implications for erecting the arches. Some disruption is inevitable but with prefabrication and partial occupation, games could continue. However it is generally more expensive than just shutting the stadium for a season or half a season and completing the work in one phase.



Spectator Roof



Independent Retractable



Roofready design

10.0 Sustainability & Culture

10.0 Sustainability & Culture

10.1 General

Reducing energy use, water consumption and providing social benefit are important factors in a stadium design. Unlike buildings that are permanently occupied, stadia have different drivers for a number of sustainability initiatives that would be standard practice otherwise. For example solar hot water is not practical due to the periodic use.

The major sustainability drivers here are passive design and cultural engagement. The spectator roof and solar filter concept are passive features that minimise the energy use of the building in the context of the local climate. In winter, this reduces the amount of heating required and cooling load is reduced in summer. In the next stage more detailed initiatives such as low flow faucets, super insulation, air curtains for suites etc will be developed to optimise the performance.

Social sustainability is central to a stadium. The socio-economic benefit of sport is well documented and it is why clubs, cities and countries globally invest in good sports infrastructure. Being located in an area that would benefit from revitalization, the new stadium has a major role to play. At a physical level, the urban design intent seeks to improve the environment, enhance Elphinstone Street and create a ripple effect of regeneration. The linear park has city wide impact and will reduce vehicle travel by making walking easy and pleasant.

Multi-use and community benefit is a major goal for the city. To this end the design addresses both large scale club use and small scale community use such as high school sport. The stadium will contain assets that will extend beyond sport and give the building life on a daily basis. Lounges and suites will be designed to

accommodate conferences, parties and community meetings. The Riders store and offices will activate the new plaza created on Elphinstone Street bringing fans, staff, shoppers and tourists to the site daily. The decision to locate the stadium at Evraz Place adds to an established trade and entertainment venue creating new opportunity to attract more events to the city through the synergies created between the existing facilities and the stadium.

The process to date has consulted the immediate community around the stadium; Evraz Place, the Regiments in the Armoury, local Councillor and First Nations Leader. Going forward a series of public consultations are envisioned to engage the wider community.

10.2 Sustainable Services

Inherent within a sustainability strategy is the consideration of energy conservation measures applied to the mechanical, electrical and public health systems with all elements designed to reduce the consumption of energy and operate as efficiently as possible.

Specific measures that should be applied generally, subject to an operational profile and whole life costing, are as follows:

- Air handling systems with full air-side economizer operation permitting "free cooling" when outside air temperatures are appropriate.
- Ventilation utilizing heat recovery.
- Variable air volume supply systems for areas with diverse utilization.
- Computer based BMS with sequencing to optimize the operation of mechanical systems.
- Demand controlled ventilation.
- Fan powered VAV boxes designed to recapture plenum heat to minimize "reheat."
- ECM motors on fan powered boxes.
- Variable speed pumping.
- Condensing boilers for increased efficiency.
- Reverse-return piping to increase pumping efficiency.
- Heat reclaim for domestic water on chillers.
- Low flow dual-flush valves on water closets.
- Low-flow urinals.
- Low flow battery power lavatory faucets.



11.0 Artist Impressions

11.0 Artist Impressions

11.1 Aerial View Looking North - West



11.2 Aerial View Looking East



11.0 Artist Impressions

11.3 Spectator View



11.4 Players Tunnel



11.0 Artist Impressions

11.5 Roof Ready (Open)



11.5 Roof Ready (Closed)





Mott Macdonald Canada Ltd.
2699 Speakman Drive
Mississauga, ON L5K 1B1
Canada
+1 905 855 2010



Pattern Design Ltd.
10 Fleet Place
London, EC4M 7RB
United Kingdom
+44 0207 651 0300



P3Architecture Partnership
2292 Dewdney Avenue
Regina, SK, Canada
S4R 1H3
+1 306 757-1669